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STATISTICS SHOWING WHICH TEETH SHOULD BE EXTRACTED IN CROWDED DENTURES WHERE EXPANSION IS NOT PRACTICABLE.

By Percy May, M.R.C.S.Eng., L.D.S.Edin.

The extreme importance of the question how crowded dentures should be treated has given rise to much discussion upon the subject, and has occasioned great diversity in the methods adopted in the treatment of these cases.

It would be beyond the scope of this paper to enter into the consideration of these methods, so that it must suffice to say that most practical men, while differing materially in their after treatment, yet agree that the extraction of one or more teeth is in most cases obligatory, unless expansion of the arch by mechanical means would suffice without removal of any.

Some dentists remove one of the bicuspids in preference to the first molar, and it is in this paper my object to show that the rule is based upon wrong or imperfect data, as I trust the sequel will prove. Crowded dentures are commoner now-a-days than was the case formerly, and by removal of one of the bicuspids the irregularity may be rectified by mechanical means for a time, until the eruption of the third molars, when the teeth resume more or less their old position, and so cause a secondary deformity, and it is with a view to avoid the occurrence of these lamentable cases that I have endeavoured to ascertain whether any initial choice of teeth to be extracted may not achieve the object in view. It may be indicated that the table appended is compiled wholly and solely from cases of persons from hospitals, dispensaries, &c., this being important since it is among this class that but few teeth are removed to correct deformities, the patients, as a rule, valuing their teeth more than their appearance. Hence I may say that nearly all these teeth were removed for actual disease.

The tables are composed without regard to age, and so supply a somewhat wider average than those recorded by Tomes, while they comprise between seven and eight thousand cases, a number sufficiently large to present an average which cannot be far from the truth. It will be seen on analysing these tables that out of 7277 teeth, 2823 first permanent molars have been extracted or prepared, as against 757 first bicuspids, upper and lower, and 944 second bicuspids.

This seems to show most conclusively, how infinitely more important it is to remove the first than either of the latter. Of course in this statement, we are speaking under the assumption that all the teeth are sound. It now appears that what I hinted at above, viz., the avoidance of secondary deformity, is really best attained by following nature's lead, and removing the teeth which decay first, and thus leave room for the eruption of the wisdom teeth, thereby preventing overcrowding of the mouth again, by the "vis a tergo" of these teeth.

It has frequently occurred that I have been obliged to remove one on either side of the mouth, of the first or second molars, although but slightly decayed, in order to relieve the painful symptoms arising from the over crowded denture, resulting from the eruption of the wisdom teeth. Clearly, in these cases extraction of the bicuspids must have failed to afford relief, or to permanently benefit the deformity. These statistics have been based upon cases treated during the past three years, and being freed as far as possible from accidental cases, may, I think, form a just basis for bringing this subject before the profession.

On searching over the English and American literature upon this subject, for very many years past, the only statistics I have been able to discover, are the tables by Tomes and J. N. Manton, as appended.

TABLE I.—Showing per centage of individual teeth treated (1881-83). Total number of teeth treated, 7277.

Composed of	Upper.	Per cent.	Lower.	Per cent.
Centrals	93	1·28	25	·3
Laterals	190	2·62	57	·8
Canine	112	1·54	42	·6
First bicuspid	555	7·63	202	2·78
Second bicuspid	561	7·70	383	5·27
First molar	1190	16·41	1633	22·48
Second molar	490	6·74	949	13·05
Third molar	286	3·94	509	7·00

TABLE II. (from Tomes's "Dental Surgery").—Showing per centage of decay under fifteen years of age.

First molar	68¼ per cent.
First bicuspid	7 „
Second bicuspid	8¾ „
Lateral incisor	3½ „

Comparison between Manton's 1500 *and* 1500 *from Tomes's "Dental Surgery."*

TABLE III. (from "Odontolog. Soc. Transact.").—Cases treated between Oct. 1856 and 1857.

	Manton.	Tomes.
Centrals	27	36
Laterals	48	58½
Canines	43	39
First bicuspid	173	136½
Second bicuspid	209	217
First molar	602	562
Second molar	269	318½
Third molar	129	132½
	1500	1500

IS THE USE OF BROWN (WHEATEN) BREAD CONDUCIVE TO THE GROWTH OF THE TEETH?

By JOS. A. BROWN, Glasgow.

I HAVE no hesitation in answering this question in the affirmative, and having a little to do in mission work, I have frequently felt it my duty to impress upon mothers the advantages possessed by brown bread as a bone producer over the white bread so much in use. This being so, I was not a little surprised at Dr. Patrick's remarks in his paper on "Civilization not the Cause of Tooth Decay," in the last issue of the "*British Journal of Dental Science.*" In his remarks on the "brown bread plan of feeding the teeth," Dr. Patrick evidently thinks that he has given the advocates of wheaten bread a very hard nut to crack: but for once our American cousin has been caught napping. The only inference I can draw from his statement is that those who advocate the use of wheaten bread as a bone-food, do so on account of its containing more glutinous or nitrogenous matter than white bread. But such an inference is not in accordance with fact. We advocate the use of wheaten bread for the purpose stated because, being made of the whole of the grain, it contains a much greater percentage of the earthy *phosphates,* which enter so largely into the composition of bone, the teeth containing 65 per cent. of *phosphate of lime.* Now it is a well known fact that this mineral matter resides mainly in the outer coverings of the grain, consequently the more completely these are removed from the flour, the less does it become a tooth or bone food.

Dr. Patrick entirely ignores the fact of the presence of mineral matter in bread, whether white or brown, without which a particle of bone never was nor ever will be formed.

In his endeavour to produce white flour, the miller discards fully 50 per cent. of the entire grain, chiefly consisting of the outer coverings, under the names *specks, toppings, fine middlings, sharps, coarse middlings, pollard, coarse bran,* and as a natural consequence such flour contains a much smaller percentage of mineral matter than whole or wheaten flour, as the following table shows:

Ten Thousand Parts contain—

	White Flour.	Wheaten Flour.
Water . . .	13 00	13·00
Starch . . .	69·50	62·00
Gluten . . .	11·00	15·00
Sugar . . .	4·00	5·00
Oil	1·00	1·25
Woody fibre . .	0·75	2.00
Mineral, or bone matter	0·75	1·75
	10·000	10·000

I conclude by calling attention to the erroneous statement contained in the query at the close of the foot note.

"Query—If brown bread will perform wonders in stopping the tendency of teeth to decay, what ought we to expect from the use of macaroni, which is charged with 17 per cent. more of the 'Tooth-producing element?'"

This exhibits gross ignorance on the part of the writer, because macaroni actually contains less "tooth-producing element" than brown-bread.

Macaroni, we are told, consists of gluten mixed with flour, and this gluten is obtained in the manufacture of starch by working flour with the hands under a stream of water. But the water does more than remove the starch from the gluten, it also *dissolves out the mineral or bone-forming matter,* thus putting macaroni as a tooth food on a lower level even than white bread.

Foods are tooth foemen, good or bad, just as they contain much or little mineral matter.

We are glad to see from the "Newcastle Daily Chronicle" that a member of our profession has been ornamented by the Khedive. We read, "The Khedive of Egypt has conferred upon Mr. G. F. Tate, L.D.S. (late of this city), the bronze star, in recognition of services rendered during the late campaign."

TRISMUS DENTIUM.

By J. J. Musgrave, L.D.S.Glas.

Referring to the article on "Trismus," by Mr. Bennison, in the "*British Journal of Dental Science*," Dec. 15th, I consider the subject to be a deeply interesting one to the dental surgeon, having had several cases of partial and complete in my own practice, in fact two of partial closure of the jaws through difficult eruption of the lower wisdom teeth, within the last fortnight, which I relieved by forcing the mouths open, under the influence of nitrous oxide gas, and removing the teeth with "Physick's Elevating Forceps" (these I have found in over twelve years' of use to be perfectly invaluable in the extraction of frail wisdom teeth).

Tetanus (traumatic) I do not consider as coming within the province of the dental surgeon, as it is described in general surgical works as being a disease of the spinal nervous system, and results from ragged wounds on the hands and feet, burns, &c. Trismus Dentium, or spasmodic contraction of the muscles of mastication, is usually a local affection, and may be accounted for pathologically as arising from irritation of the fifth pair of nerves, which causes, I should imagine, paralysis of the motor fibres supplying the masseter and internal pterygoid, as well as the mylohyoid and digastric muscles. This nervous irritation may easily be transmitted from any diseased or fractured teeth, by means of reflex action of the sensory fibres of the fifth. Remove the cause and relief is usually the result.

How often are we asked by patients to remove a sound tooth when a defective one (not painful in itself), is the cause. This reflected pain is a practical fact, though there is no accounting for the course it may take, generally I believe it locates in the terminal branches of nerves. Cases of trismus dentium are by no means rare in Lincolnshire. People who live in the heart of the agricultural districts very often do not consult the dental surgeon until they are in a desperate condition, hence severe cases of trismus, alveolar abscess, fistula, &c. Some months ago, a case came under my notice of long continued closure of the jaws in a young farmer, about twenty-five years of age. He stated that it had been gradually getting worse for four years, and at the time I mention he could not open his jaws more than a quarter of an inch, and in consequence was living on spoon diet. Pulling back his cheek I found the second lower molar decayed and sensitive on pressure, there was also a small fistula at the posterior edge of the masseter, about the angle of the inferior maxilla. My advice was to get his medical man to administer chloroform or ether, and let me remove the tooth. However, though he expressed a fear that it would ultimately be his death, I have not seen him since.

CLINICAL LECTURE ON SALIVARY CALCULUS AND HYPERTROPHY OF BICHAT'S BOULE GRAISSEUSE.

By Dr. Paul Berger.
OF THE HOPITAL DE LA CHARITÉ, PARIS.

At No. 11 of the Salle Ste. Vierge (The Virgin's Ward), lies a man a little over thirty, employed at the Post Office, who has always been in the enjoyment of perfect health, and who has entered the hospital solely on account of an ugly deforming swelling of the cheek, which has developed very slowly indeed. The patient first noticed the tumour about fourteen years ago. It has never given rise to any pain or trouble even during the act of mastication, and has never been inflamed.

Five or six years ago he consulted a surgeon, who made an incision into the tumour, and gave exit to a small hard white mass, having the appearance of the crown of a tooth. When the wound had closed, however, the tumour did not appear to have undergone any change, and the deformity of the cheek was exactly the same as before the operation.

The present condition was as follows: In the substance of the cheek on the left side is a swelling reaching from the malar bone to the masseter muscle and to the buccal commissure, not well defined, which disappears altogether during certain movements of the face, but stands out very prominently when the jaws are closed. The tumour is also difficult to limit by palpation on account of its tendency to slip away to the side. On careful exploration, however, it is possible to recognise the existence of two distinct and freely movable tumours. The first one feels soft, loose, and without any sign of tension or fluctuation; it is not elastic, not resisting, and not distinctly lobulated. The second lies more deeply in the canine fossa, and gives the sensation of a small hard body directed towards the ala of the nose; on palpation it disappears, and seems to ascend towards the malar bone. It can, however, be made to descend again in the gingivo labial furrow in such a way as to be fixed by the finger through the mucous membrane of the mouth. It is of a very hard bony consistency, and of a very regular, nearly spherical shape, and it has no connection with any of the neighbouring parts.

We have here to deal with two different tumours, one of the cheek and another of the gingivo-labial region.

The tumour of the cheek does not show any sign of fluctuation, and if it were the only one present I should not hesitate to say it was a physiological lipoma between the masseter and buccinator, or in other words, an hypertrophy of Bichat's *boule graisseuse* (fatty mass), which is not at all rare.

But what is the nature of the second tumour? The former history would lead us to believe that it may be some dental anomaly. Might it be a case of migration of a tooth? No, for our patient has the proper number of teeth, and this mass is also quite unconnected with the jaw. Might the case on the other hand be one of anomalous genesis? To this opinion I must acknowledge I rather inclined, and thought it might be an example of a supernumerary tooth developed on a level with the canine fossa and independently of the jaw. The duration of the case and the position of the tumour militated against its being an osteoma. An enchondroma also would have grown much more rapidly and its size would have been at least double the present one if it had only lasted six years.

One point, however, remained to be settled; were we dealing with a salivary calculus? Calculi in Steno's duct are rather rare; their seat is in some part of the course of this canal, so that they are as a rule but very slightly movable. Besides which, a calculus in Steno's duct ought to prove a hindrance to the flow of saliva, give rise to a greater or slighter distension of the gland and cause some pain or salivary colic, and none of these symptoms were present. The calculus might have ulcerated through the wall of the canal and lodged itself beneath the mucous membrane. But this lesion could hardly have occurred without producing some amount of reaction, some pain and a stoppage in the flow of saliva.

With regard to the relation between the two tumours, I was not certain whether we were not in presence of an odontoma surrounded by a large diffuse and rather flabby agent, containing a certain quantity of fluid. I had also expressed the diagnosis of a Bichat's lipoma for the first tumour with some degree of separation in the tissues, which would thus have allowed a hypertrophic portion of the fatty mass to get beneath the mucous membrane of the mouth, where it had acquired a certain degree of hardness.

My final diagnosis, however, was dental anomaly, supernumerary tooth in canine fossa, very movable, together with some hypertrophy of Bichat's *boule graisseuse*, the possibility of the co-existence of a large cyst surrounding the odontoma being kept in mind.

At the patient's request an incision was made over the small tumour and a spherical body brought to light, but which is no way resembled an odontoma. It was a salivary calculus of granular consistency, and made up of a number of concentric layers.

Immediately after the operation the tumour of the cheek seemed to have disappeared; moreover, when the patient filled his mouth with water, the swelling increased, while the pressure required to expel the water caused an immediate reduction in its size. This appearance was however due to the fact that the water taken into the mouth forced air into the naturally lax tissues of the cheek, and gave rise to a kind of temporary emphysema.

The two tumours were thus perfectly independent, and the diagnosis must undoubtedly be: one degree lipoma of Bichat's *boule graisseuse,* two degrees salivary calculi, developed without giving rise to any pain or inflammatory phenomenon, one of these having been removed six years ago, the second one this very day.

As soon as our patient has sufficiently recovered from the operation, I shall proceed to a further exploration of the cheek, to the removal of the second tumour, and I shall then try to see whether Steno's duct contains any more calculi.

ADDRESS DELIVERED AT THE MEETING OF THE ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

By the President, ANDREW WILSON, L.D.S.Ed.

(*Concluded from p.* 1169, *Vol. XXVI.*)

The question of economy as between the home made and liquid form is gone into, and great stress is laid on having the patient thoroughly under its influence during the operation, so as to avoid all shock. Noticing those conditions in which the exhibition of the gas is unadvisable, the preparation of the patient prior to its being given is considered, all fuss as regarded the dress of the patient being deprecated. The paper concludes by advising that the operator should have everything likely to be required in case of accidental complication, ready at hand, and the use of the hawksbill forceps for the lower jaw, especially in gas cases, strongly recommended. At the conclusion of this paper Mr. Macleod stated that he had been employing a combination of the gas and ethedene dichloride (a combination not previously published) for a short time, with success, a considerable increase in the duration of anæsthesia being gained, with, so far as he had found, no drawbacks.

At the same meeting Mr. Watson gave "Notes on a Case of Pyæmia from Alveolar Abscess," which had terminated fatally. In January, 1881, there was a discussion on "Alveolar Abscess, its Pathology, Metastatic Exhibition, and Treatment," initiated by Mr. Macleod.

At the following meeting Mr. Watson read a paper on "Secondary Hard Formations in Pulp-cavity, their Physiology, and Pathological Significance," in which he gives the results of the examination of the pulp and pulp-cavities in 1,000 cases, nearly one-half showing secondary calcification in one or other of its varieties. The question as to whether secondary calcification is a physiological or a pathological phenomenon in man, he decides in favour of the latter, hyperæmia induced by continued irritation, being the cause which had led to renewed activity in the odonto blasts; those cases in which such formations were absent having probably been affected by rapid decay. Several interesting cases are detailed, in which more or less severe neuralgic pain had seemingly been produced by these secondary formations.

The session closed by a paper on the "Suctorial Teeth in the Land Carnivora," by myself, illustrated by specimens from most of the genera.

Taking this as our record, I think we can claim to having done a good deal to carry out our more scientific objects, the more especially when our limited membership and the still more limited number of those members who contribute papers, &c., to our meetings are considered. I trust that this recital of our past doings may stimulate not only *all* of our younger members, but also *some* of our older ones to action, and that the result will be the keeping up of a continued supply of the pabulum required for our meetings.

Speaking of the younger members, I need scarcely point out the many very great advantages for such work which they have over their seniors, owing to the more scientific training which the L.D.S. curriculum enforces, and it will say little for them if such training does not necessarily lead, not only to the acquirement of habits of more accurately observing facts, but also of readily and briefly recording them.

Gentlemen, I will now conclude by thanking you for the patient attention you have given to what I fear has been a trial of your endurance.

On the President having been awarded the usual vote of thanks, it was further resolved that the concluding portion of the late President's retiring address should be published in conjunction with the address just read, and issued in pamphlet form to all registered practitioners resident in Scotland, in order that they might be informed of the scope and objects of the Society.

Cases of Interest.

Mr. Macleod exhibited the model of an upper jaw, showing a most unusual bilateral exfoliation of alveoli and lateral walls of antrums.

The patient, John Cheyne, age 45, came to the Edinburgh Dental Hospital on the 29th of March, for advice and assistance. He complained that he could neither eat nor drink, as the action of swallowing projected the contents of the mouth through the nose, instead of down the gullet. His articulation was also much impaired.

No history of syphilitic disease or salivation could be traced, and uninterrupted good health had been enjoyed for 25 years—at least such good health as a drinker could enjoy. Six weeks before he appeared at the hospital, he had caught cold, through sleeping out when on a drinking bout. About a week after, he noticed his teeth loose, and the fœtor from his breath was such that he was a nuisance to himself, and all about him. He consulted his medical attendant, who, on proceeding to extract one of the teeth, was much astonished to find the mass come away. He then removed the corresponding necrosed alveoli with the teeth. The stench was so horrible that he at once consigned them to the flames. This he afterwards regretted, as it at once destroyed a clue to correct diagnosis, and a rare pathological specimen. There could, however, be little doubt as to the cause being neglected alveolar abscess.

An artificial denture and obturator was made, and answered admirably; all the lost functions being immediately restored.

Mr. M. also exhibited model of upper jaw of female patient, aged 30, with large epulo-fibroid tumour. The excised tumour was shown, and sections of it, prepared by Dr. Woodhead, were exhibited under the microscope. It presented the usual appearance, being mainly composed of fibrous, interspersed with cartilaginous tissue, and here and there small speculæ of bone. The tumour was of large dimensions, and was excised at the Dental Hospital in April last, and has since shown no signs of recurrence.

The Secretary showed model of upper jaw, with extensive exostosis of the outer alveolar border, and stated that he had had the case under his observation for ten years, during which it had gradually gone on increasing. The gentleman, from whose mouth the plaster impression was taken, had latterly lost his health, and was about 18 months since seized with facial paralysis, which the medical men he consulted thought might be due to, or related to the same cause, viz., exostosis in the cranium. The patient has, since the model was taken in September 1883, died. The model was presented to the Museum.

Mr. AMOORE exhibited under the microscope three preparations illustrating the structure of the interglobular spaces found in dentine. The first was the pulp of a tooth extracted on account of caries. On examination it was seen to contain numerous nodules of dentine, some sufficiently large to show traces of the dental structure, others much smaller and apparently structureless. These latter were generally globular, and in some parts very closely packed together; at the same time calcification had not proceeded sufficiently to obliterate their individual contours, which were distinct, and reminded one very forcibly of the calcospherites of Rainie and Harting.

Specimen No. 2 was a longitudinal section of an upper central incisor, in which the interglobular areas were shown very markedly immediately below the line of junction, between the enamel of dentine, and gradually fading off towards the pulp cavity. The adjacent enamel seemed to have suffered somewhat similarly, as the formation was irregular, and it seemed not improbable that the disturbance in nutrition which occasioned the one imperfect deposition was the cause of the other also. In this instance it was remarked that the calcification had proceeded to the obliteration of the greater part of the contour, and the outlines of the globules were not distinct as in the first preparation.

No. 3 was a transverse section of a portion of secondary dentine from the tooth of a walrus, in which these interglobular spaces were found so constantly that they might be considered perfectly normal. The dentine was, as might be perhaps expected, irregularly formed, and there were scattered throughout numerous traces of blood-vessels, the spaces which they occupied having become completely calcified. The axial portion was usually very evident.

The CHAIRMAN then announced that the next meeting would be held on the second Thursday of December, and would be a conversational one.

MATERIA MEDICA.

By Mr. STAINER.

(*Concluded from p.* 1161, *Vol. XXVI.*)

IRON.

Its History.—This metal, called by the alchymists "Mars," was known in very ancient times; it appears to have been the first mineral used internally as a medicine, and from its earliest use up to the present time has occupied a place at the head of mineral tonics.

Its Physiological Effect.—Iron seems to be inert, or acting only mechanically, so long as it retains its metallic form; but as it readily oxidises in the alimentary canal, it thereby acquires medicinal power. Now, acids promote this chemical change, therefore acid wines and fruits assist in rendering the metal active, while alkalies and carbonates have an opposite effect. The internal employment of iron causes blackening of the stools, owing to the formation of hydrated sulphide of iron and a little tannate. Iron is one of the few metals which by mere oxidation is not rendered more or less poisonous. The local effects of the sulphate, pernitrate, and perchloride of iron are those of caustics and irritants, and their preparations have accordingly been ranked amongst poisons. Most of the ferruginous preparations are astringent, that is, they constringe the parts with which they are in contact, and thereby diminish secretions and check sanguineous discharges. Thus, when swallowed they repress the secretions and exhalations of the gastro-intestinal membrane, and thereby render the alvire evacuations more solid. The sulphate, pernitrate, and perchloride of iron are the most powerful of the ferruginous astringents. When taken in large doses, or when the alimentary canal is in an irritable condition, all the compounds of iron are liable to excite heat, weight, and uneasiness at the prœcordia, that is, the front of the chest and diaphragm, nausea, and even vomiting, and sometimes purging. Now, before chalybeates can produce constitutional effects they must be absorbed (it is probable that only a small proportion of iron introduced into the alimentary canal is absorbed into the blood, the greater part is excreted in the fœces in the form before stated), and their absorption is generally assisted by combination with vegetable bitters, hence the reason why the tincture of iron is so often prescribed with infusion of quassia or calumba. The constitutional effects of iron are best observed in anæmia. If in this condition chalybeates are administered, the blood acquires a more scarlet colour, the skin assumes its natural tint, the lips and cheeks become more florid, the pulse becomes fuller and stronger, the temperature of the body is increased, and the muscular strength augmented.

Therapeutics.—The general indications for the use of iron are debility, feebleness, and inertia of the different organs of the body, atony, defect of the red corpuscles of the blood, as anæmia, or a watery condition of the blood, as hydræmia. The contra-indications are the reverse of these, as in general excess of the blood (plethora), also congestion or a tendency thereto of important organs, especially of the brain and lungs, and intestinal irritation. Iron preparations produce a distinct influence upon the nervous system, independent of their hæmatinic power, full doses sometimes relieving attacks of neuralgia. There are so many preparations of iron, and as they all appear to act as blood-restorers, when their solubility is insured (no one class of iron salts acting in a way superior to another), I have thought it only necessary to consider that preparation which we, as dental students, use so frequently, viz., the liquor or tinctura ferri perchloridi. This preparation is, in its local action, one of the most powerful of the preparations of iron, it acts as an energetic astringent and styptic, and in large doses as an irritant. When swallowed in large medicinal doses it readily disorders the stomach. Its constitutional effects are the same as those of other ferruginous compounds, but it appears to possess in addition powerful diuretic properties by exercising some specific influence on the whole of the urinary apparatus, producing a remarkable effect in affections of the kidneys, bladder, and urethra. Therapeutics, as an astringent, it is sometimes employed as a local application to ulcers attended with a copious discharge. As a styptic, to stop hæmorrhage from numerous small vessels, and hæmorrage after the extraction of teeth. The following are the principal phenomena attending its effects on an artery:—

1. The formation of primary and secondary clots.
2. The infiltration of plastic lymph into the sheath of the artery and adhesion of the clots.
3. The elimination of the disorganised parts.
4. Hypertrophy of the middle coats.
5. The encysting of the clots.
6. The disappearance of the secondary clots and plastic formations.
7. Occlusion of the artery.

Dose.—The liquor, or tinctura ferri perchloridi, may be given in doses of ♏x. to ♏xxx. gradually increased to ʒi. or ʒij., well diluted.

All preparations of iron are less liable to derange the stomach if taken with, or soon after a meal, and they produce a more or less constipating effect on the bowels.

CIVILIZATION NOT THE CAUSE OF TOOTH DECAY.

By John J. R. Patrick, D.D.S., Belleville, Illinois.

(*Concluded from p.* 1165, *Vol. XXVI.*)

If we had to subsist on eggs alone, we should, in order to satisfy the requirements of nutrition, place ourselves in the possition of the chick and consume the shell as well as its contents.*

But inasmuch as our food is made up of a mixture of animal and vegetable, and the vegetable consisting chiefly of seeds, fruits and roots—a class that hold in store large quantities of nitrogenous matter, we can very well spare the husks of wheat, including the albuminous layer, for the nutritive salts contained in our animal food alone would more than compensate their loss. Take for instance the proteine compound of milk (caseine) which contains sulphur, besides the four elements—carbon, oxygen, and hydrogen, and is remarkable for the large quantity of phosphate of lime it holds bound up within it.†

And when we reflect that all the animal tissues are evolved from the nitrogenous elements of food (albumen, fibrin, casein, legumin, and gelatin), it follows that animal food furnishes a larger proportion of the phosphates of magnesia and lime than is found in vegetables.

It is very natural to suppose that the primitive history of so important a plant as wheat would be known, but such is not the case, for its cultivation is of great antiquity; but enough is known of its origin to classify it as one of the primitive grasses of central Europe, and from which all the many varieties have been produced by cultivation. The early history of the many races of people on the continents of Asia, Africa, Malayo-Polynesian, Ancient Mexico, Central America, and Ancient Peru, shows that these people were without wheat. The ancient Britons at the time of the Roman Invasion, and the many races of men on the North American Continent before the advent of the European, were all strangers to this grain.‡

One hundred years ago it was only the wealthiest people in Europe who enjoyed the occasional luxury of wheaten bread, and the masses of people lived on small allowances of oats and barley; hunger was always present to the minds of the people ; even 100 years ago the United States did not produce enough to make bread for its own people ; whereas, we now export annually over 300,000,000 of bushels, a larger quantity than was produced on the entire globe at the time our forefathers were signing the Declaration of Independence ; and it is only since we began to export our surplus food that the world has really had enough to eat. The struggle of civilization has been to get rid of the husks, but as time rolls on, the course of events become contradictory, for white bread has become the food of the poor, and brown bread has become the luxury of the rich.

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* The body of an egg contains neither phosphoric acid nor lime, it was necessary therefore, that nature should provide means of furnishing both these substances, which it does at the expense of the shell, which becomes thinner and thinner as the process of incubation progresses, until the living embryo appropriates a sufficient quantity for the formation of its bones. Part of the albumen combines with the shell for this purpose, and another portion forms the feathers.

† If a persistent decomposition of the teeth can be arrested by the use of bran, or shorts, or brown bread, great caution should be observed in the use of cheese.

‡ "Seeds of wheat retain their vitality from three to seven years; the stories of 'mummy wheat,' which is said to have germinated after remaining thousands of years in the tombs of Egypt, are now discredited; the cunning Arabs have even supplied credulous travellers with mummied maize grains and dahlia tubers, neither of which were known before the discovery of America."—*American Cyclopædia*, vol. xvi., page 587; 1881.

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ANÆSTHESIA.

By Kenneth McAlpin.

(*Continued from p.* 1171, *Vol. XXVI.*)

All constriction by tight garments should be removed from about the neck, chest, and abdomen, and the patient's head should be raised slightly above the level of the body, care being taken that no curves are made in the windpipe.

There have been very few cases recorded of the anæsthetic not producing the desired result. Mr. Lyddon relates a case of a patient (a clergyman) who suffered a great deal from dyspepsia, so much so, that he was compelled to live almost exclusively on biscuits and champagne, or claret. When the nitrous oxide gas was first administered he inhaled it freely and well, in fact, so freely and so well, that he had inhaled about twenty gallons of it, when Mr. Lyddon came to the conclusion that it had no more effect upon him than common air, so he concluded to take the tooth out without the aid of the gas. Mr. Lyddon was of opinion that the constant use of stimulants might, in some way, have an effect upon the chance of the success of the anæsthetic, though in this case the patient was by no means an inebriate.

To produce anæsthesia there must be sufficient of the agent existing in the blood at one time, as when the drug is administered slowly it is eliminated before it has had time to produce the desired effect.

The best effects are produced when it is inhaled, as it is consequently most perfectly introduced into the blood. The immense surface presented in the lungs brings the blood into osmotic with so much of the vapour that the pulmonary circulation becomes completely charged with it. This carries it immediately to the heart, from whence it is distributed over the whole body, before it has had an opportunity to be eliminated. But when an anæsthetic is injected into a vein, it is carried immediately to the heart, and from thence through the pulmonary artery to the lungs, and then it is immediately eliminated before it has had a chance of reaching the arterioles at all.

[Owing to want of space, we are obliged to defer completion of this article until our next issue.—Ed.]

THE PAST, PRESENT, AND FUTURE OF MECHANICAL DENTISTRY.

By L. P. Haskell.

[Owing to want of space, we are obliged to defer completion of this article until our next issue.—Ed.]

OUR FUTURE WHEN QUALIFIED.

[Owing to want of space, we are obliged to defer completion of this article until our next issue.—Ed.]

ON THE RELATIONS BETWEEN DENTAL LESIONS AND DISEASES OF THE EYE.

By Henry Power, M.B.Lond., F.R.C.S.,
OPHTHALMIC SURGEON AT ST. BARTHOLOMEW'S HOSPITAL, AND SURGEON TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, ETC.

[Owing to want of space, we are obliged to defer completion of this article until our next issue.—Ed.]

British Journal of Dental Science.

LONDON, JANUARY 1, 1884.

THE LEGISLATURE AND DENTISTS.

THE utter callousness of paternal Governments, when *bonâ fide* grievances exist, is matter of history. An instance, one we may say among very many, has but recently been brought under our notice, an instance of how grossly the claims of justice, nay, even of humanity, may be overlooked either wilfully or through crass ignorance. It would take some time to look through the statutes at large, but were such a search instituted there would be found very many Acts which bear more or less pertinently upon factory employés, workhouse inmates, prisoners, &c. Elaborate dietaries have been formulated for our poor's houses; the most minute instructions have been enjoined upon the owners of factories where poisonous substances are made; smoke nuisances, private slaughter-houses, are foster children of the State, and are accordingly broad-arrowed with regulations, thus far shalt thou "*Civis Romanus*" go and no farther!

But we find that this paternal Government has undertaken trade—save the mark!—and has entered upon the commencement of a gigantic system of commerce. The paternal Government also possesses an advantage over Messrs. "Dow and Row," "Stokes and Styles;" nor is it slow in availing itself of this, it has a monopoly and does not fail to retain it. We are not so purblind as to question the vast advantage which the whole country reaps from the monopoly enjoyed by the State for the carriage of letters; we recognise also as incalculable boons the postal telegraph and parcels post; but we fail to see that if the State operates on enormous undertakings that it should do so to the detriment of its employés. Surely if we should look for broad views as to hygiene and liberal treatment of those whose very life is devoted to the service of the commonwealth, it would be natural to expect such at the hands of the State.

Let us not be too sanguine. Let us examine the facts and then let us, if we can, forget that England is a country wherein one hears much of progress in sanitary matters, and where a benevolent public is ever agog to correct one abuse or another.

A surgeon practising Dentistry, who possesses a widely distributed *clientèle,* was struck by the number of postal office employés who sought advice and aid at his hand. The fact induced an unofficial enquiry to be made at headquarters and among those in high office in State matters, as to the condition the postal office employés were in and what means they had of obtaining advice about their teeth and kindred-structures.

It was found that the surgeon who is appointed to superintend the treatment of gross lesions is also the referee in case of "a toothache!" We may remind our readers that one of the medical officers at the Post Office is a lady, whose ability none will question, but of whose expertness as an operating dentist many may be permitted to entertain grave doubts.

We think no honest surgeon will gainsay us when we affirm that none but a specialist can attempt, in the present state of our knowledge, to attempt to diagnose much less treat oral troubles. No one but a specialist would willingly perform an iredectomy, nor would any undertake to avulse or advise filling a carious tooth, unless he possessed both ample special training in dental surgery and a fairly wide special experience. We believe not, at least we hope not.

But the matter does not rest here. When the cases are held to be beyond the ken of the appointed medical officers, they are sent off to the dental hospitals to enjoy the bounty of charitable persons, who institute and support hospitals for the deserving poor and not for employés of corporate bodies who certainly are able to provide special attendants for those under their control. That the Post Office people are lucky in escaping to the hospitals none will gainsay, for there, at least their ailments will receive due and careful attention; but it is a grizzly thought that very many either have to submit to the ministrations of those whose special acquirements in Dentistry must be far too slender to prevent their making many slips, while others drift off to advertising quacks and charlatans. It is said by many of those engaged in post office duties that they dread going to a hospital; dread the waiting, which of course cannot be avoided; and dread the companions they meet there, and with whom they must be cheek by jowl.

When we remember that there are many delicately-nurtured women, ladies by birth and instinct, now employed at post offices, we cannot wonder that there are very many who, unaccustomed to the sights and sounds of even the best managed hospitals, dare not enter the portals, and so as an alternative select to suffer in silence and so vastly aggravate the disease which oppresses them, or else save a few shillings from their hardly-earned salary to visit some dentist. These ladies know their suffering and impecuniosity, but they do not know who is a Dentist and who is a dental vampire, whose clutches they must first feel to know the depths of their miseries. Surely it is not unreasonable that some discontent should exist, that it should be said that the employer should protect those under his care from the misery and loss his present apathy entails upon them. And yet, incredible as it must seem, when the officials highest in the departments were asked whether they would accept the services of an honorary dental surgeon should a man of eminence and recognised standing be found willing to undertake the post, the reply was what amounted to a refusal, the *status quo* was considered satisfactory and the Department confidently battened upon its blissful self-sufficiency.

We protest that such a state of things is preposterous.

Here are thousands of men and women, boys, and girls, who are forced into having the diseases with which they are most afflicted diagnosed by those whose special knowledge is *nil,* and treated by being sent to charitable institutions. Can such a rotten system be surpassed?

Were this an insolated case it would be perhaps referred to an accidental oversight; but unhappily this case is an example, not an exception of a rule. Throughout the length and breadth of the United Kingdom we find public institutions, charities, private factories, huge places of business, where hundreds or thousands are employed, schools and reformatories, prisons, workhouses and countless other places where men and women are collected together, and in one and all we find the surgeon dentist conspicuous by his absence; be his ministrations needed often or seldom, his function ought to be recognised and his appointment made. Surely there are many of us who can do somewhat to abate this anachronism, this perversion of justice, and can use their influence to remedy an evil which none can fail to recognise now that it is clearly pointed out.

In our last issue will be found a notice convening a meeting of dental practitioners, at Birmingham, on the 12th instant, for the purpose of considering the desirability of forming a dental Society for the Midland Counties, and we cannot too earnestly impress upon all practitioners—having the true interests of the profession at heart—the necessity of making an effort to be present on the occasion and assisting the deliberations by their counsel and advice. To any unprejudiced mind, there can be no doubt of the advantages likely to accrue from such societies not only to the profession but to the individual members.

With regard to the objects of the proposed Society, "The promotion and diffusion of knowledge in matters pertaining to dental surgery, the encouragement of intercourse among the members of the profession; and the furtherance of the interests of dental surgery as a branch of medicine," they are sufficiently comprehensive, and certainly worthy of the hearty support of every member of the profession. It should be borne in mind that it is only through organized associations that dental thought can be thoroughly and effectually disseminated and usefully applied, and it is by such means that one member is able to communicate any new ideas and improvements to his fellows.

We believe the idea of forming a society, with its head-quarters in the Midland metropolis, has been under consideration for some time, and although from one cause or another its fulfilment has been delayed, there seems now every prospect of the proposal being carried to a successful issue, and as the motto of Birmingham is "Forward," we trust that on this occasion it will be realised, and that a society will be inaugurated worthy of the practitioners in the Midland Counties. It is satisfactory to know that many practitioners whose position is undoubted have signified their intention of attending the meeting and assisting in the initiation of the Society; and from the amount of support which we understand is already promised its success appears undoubtedly assured. It is not intended that this proposed Society should be in opposition to any existing organization, but that it must of necessity promote the good cause all such societies or associations have in view. Although much has been accomplished, still much more remains, for we are only as yet "on the threshold of our science."

In the present state of the "Dentists' Register" it is difficult to distinquish *all* those who are eligible to be invited to the meeting; but we know it is meant that all who conduct their practice respectably are invited to the meeting and will be heartily welcomed.

NEW YEAR'S PROGRAMME.

As we again meet our Readers, another Year has rolled in upon us with its burdens of joys and sorrows, successes and failures. While we wish that of the former our friends may enjoy an ample share, we propose to advert cursorily to the Happy New Year which all of us hope for the "*British Journal of Dental Science.*" As time wags changes must come, and it is of such changes that we have now to speak. We have, acting upon our motto, fearlessly put forward the views of the most opposed workers in the domain of Dental Science; where England has been wanting, we have sought to remedy her deficiency from the workshops of the Continent or America, and by these reproductions have enabled English readers to know the views of the profession abroad.

We propose to continue the production of original articles on subjects of especial interest to Dentists, and also the valuable "Selections" which have proved so serviceable to our Readers.

But still further to facilitate the diffusion of knowledge of Continental views and Continental work, it is our purpose to place in the hands of our Readers of 1884 ABSTRACTS of all the articles of any note which may appear in the journals abroad, so enabling those who have not facility in reading foreign languages, or leisure to turn over the Continental and American periodicals, to obtain an accurate insight into all that happens and is worthy of note.

We cannot conclude our remarks better than by wishing our Readers a Happy New Year.

THE TEETH IN THE INSANE.—It is a misfortune to pathology and dental surgeons that we have so few opportunities for studying the dental diseases which are intercurrent in general and especially chronic atrophic maladies. Degenerate changes have been noted in the bones of people afflicted with dementia, we yet await statistics as to the teeth in these conditions. Possibly some of our readers can collect such and so fill an ugly gap in dental pathology.

HŒMOPHILIA; TOOTH EXTRACTION; TRANSFUSION.—In the "Gazette Médicale de Nantes," the following very interesting case appears. The patient, a soldier in the French line, aged twenty-two, was admitted into Hôtel Dieu for a slight wound of his left thigh. Severe and troublesome hæmorrhage resulted from this wound, and it was this fact which caused an enquiry into the family history. A marked tendency to hœmophilism was shown to exist; a brother having died from the hæmorrhage following the extraction of a tooth. The patient suffering from toothache applied for relief to the "Interne" on duty, who, in ignorance of the hœmophilitic constitution of his patient, pulled out the offending member. The operation was following by incessant oozing, which defied all hœmostatics. At length, a specially prepared cautery-iron was passed well into the cavity and then a plug of wool, soaked in perchloride of iron, firmly fixed in. In a day or so this had to be removed as suppuration took place, the gum receding from the jaw, and so exposing a large ulcerating service. Fresh and severe hæmorrhage then appeared and reduced the patient to such a pitch of exhaustion as to cause the authorities serious apprehension. Transfusion of 200 grams of pure blood was performed, the alveolus having been first plugged.

The man improved, but hæmorrhage once more recurred, and a second transfusion was carried out. Although in the course of this operation the patient fainted, he eventually picked up and made a good recovery, so much so that he was enabled to undertake the arduous duties of his calling as vigorously as his non-hœmophilitic *confrères*.

ANOTHER CASE OF HŒMOPHILIA.—The record of a similar case to the above reaches us from Salt Lake City. An Englishman, aged twenty-five, had a molar extracted and hæmorrhage ensued, which in one week killed him. It appears that although he possessed a well-marked history of family hœmophilism, he had personally undergone tooth extraction before, without serious loss of blood, but had incurred hæmorrhage from trifling wounds. Being a Mormon he would not submit to medical or surgical appliances to arrest his bleeding, but why his conscience allowed him to seek the dentist's aid if he refused the surgeon's, we are left in the dark. All men are more or less inconsistent, so perhaps even Mormonism is not perfect after all!

TRISMUS.—We publish in another column a communication upon "Trismus." Our readers will, upon referring to our issue of 15th ult., see an important case by Mr. Bennison of the same nature. These cases pathologically are probably peripheral rather than central, and hence more spastic than tetanic, they are highly important from a practical point of view. Dr. Magitot's article on "Fluxion Dentaire" deals with these cases, and we may refer our readers to preceding issues in which Dr. Magitot's valuable paper was reproduced in our pages.

THE GUMS IN PREGNANCY.—M. Delestre, in the "Journal de Med. de Paris," notes some curious affections of the gums, both in pregnancy and during the menstrual periods. He states he has found the gums swollen, congested and softened. In pregnancy these troubles commence about the second month. Didsbury describes three degrees of gingivitis in pregnancy. In the third the gums become deeply congested, and are of a violet colour. Tartar and food debris also collects about the teeth and may occasion some fœtor. The inflammation may extend into the alveolo-dental periosteum, the teeth become decalcified, become pushed from their sockets, and finally drop out. The anterior portion of the jaw, in front of the canines, suffers most, and only the convex surface of the jaws is affected. Treatment should be energetic. The tartar being carefully removed, the inflammation may be combated by astringents and in severe cases Tc. iodi, Chromic acid or Hydrate of chloral, may be mixed with them.

DAMAGES FOR ACCIDENT WHILST UNDER ANÆSTHESIA.—The "New York Medical Record" reports a decision in an action brought against a Dentist for damages, incurred by a patient who was placed under the influence of nitrous oxide gas while an operation was performed. A piece of tooth was allowed to fall down his throat, and this caused a cough which only terminated after four weeks, when he expectorated the fragment of tooth. The judgment given and afterwards confirmed was for 500 dollars for the plaintiff. Under an anæsthetic the patient is freed from responsibility, but a graver one is incurred both by the operator and administrator, since it is incumbent upon them to foresee every possible accident and to guard against them. Mere absence of negligence goes for nought. It is assumed that if gas or ether is required that the case is one out of the common run, and hence that the Dentist is prepared to meet special difficulties, and take special precautions. When we see the liability of Dentists it seems little less than courting trouble for them to persist in administering anæsthetics without the aid of a duly qualified anæsthetist, qualified we mean not merely legally but actually.

DENTAL BENEVOLENT FUND.—We are requested to state that all communications respecting this Fund should be addressed to Mr. Oakley Coles, 18, Wimpole Street, who has kindly undertaken the duties of Secretary to the Fund, and *not* to the Secretary of the British Dental Association.

THE appointment to the chair of Dental Surgery, at the Royal College of Surgeons, Ireland, has been postponed.

IN our last issue Mr. W. H. Kirton's name appears as Kiston, through a clerical error.

THYMOL AND CARBOLIC ACID.—At the meeting of German Dentists a paper was read which proposed to prove that thymol was a better substance for Dentists to employ than carbolic acid. Comparing the asepticising powers of drugs it was stated that to produce complete asepticism—

Thymol . .	1 per 1000,	required 4	minutes.
Carbolic acid .	1 per 40	,, 4	,,
Chloride of zinc .	1 per 12	,, 6	,,

Thymol is said to be much less irritating, and so less liable to set up secondary irritation. The following is a useful formula—

℞

Aq. destill	1000 parts.
Glycerin	20 ,,
Alcohol (absolute) . . .	10 ,,
Thymol.	3 ,,

M.

BACTERIAL REQUIEM.—There is going the round of the papers a profoundly silly discourse of a Dr. Gregg, who hails from Buffalo, and who fondly imagines he has sung a requiem over the whole system of micro-organisms. This gentleman is so hopelessly ignorant of the subject upon which he writes that he opines minute fragments of fibrine could be mistaken by any one, save some crassly ignorant folk whose education varies inversely as their impudence, for bacteria. Of course, shape, development, life history, &c., are minutiœ to such luminaries and undeserving of study! In the nineteenth century a man might as well be ignorant of the major catechism as of the existence and home-life of micrococcus and bacillus.

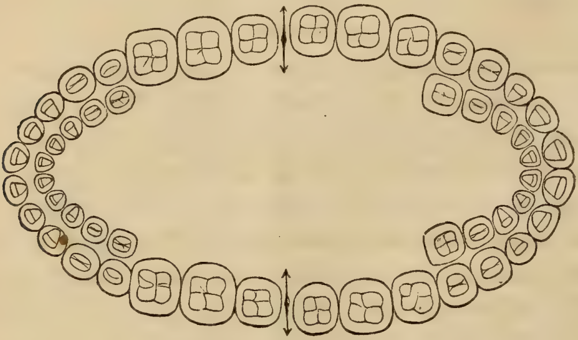
CALCIUM STARVATION IN GESTATION.—Dr. Kirck, writing in "Journal de Med. et de Chirur.," draws attention to the prevalence of caries during gestation. There is a drain upon the mother's calcium caused by the lime requirements of the fœtus; to meet this, she starves her own tissues and hence arise dental caries and (?) osteomalakia and adult rickets. He recommends the lacto-phosphate and hydrophosphite of lime as useful for gestating women.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to put one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

MR. WRIGHT'S RUBBER STAMP.

Mr. Rutterford has prepared two sizes of rubber stamps like the engraving—as suggested to him by Mr. Wright—one the same size, and one about as large again, with which it is simple for anyone to stamp on any book he is in the habit of registering cases. The engraving itself is no doubt known and fully appreciated by many—for it is not new—but the idea of each stamping his book for himself is both ingenious and useful, and the temporary teeth within the permanent make it complete.



NEW OPERATING CHAIR.

Mr. Josiah Ritchie has introduced a neat operating chair especially designed for those who require an efficient but inexpensive article, or to do their best for hospital accommodation without unnecessary expenditure of the subscriptions of the benevolent. It is strongly, but nattily made of beech wood, either polished as it is, or stained to represent walnut or mahogany; has a back that from the perpendicular can be easily set at any required angle, and a rising and falling head-rest adjustible at any height desirable. Upholstered in rep it is altogether an elegant and serviceable chair, fully carrying out the objects for which it is constructed.

DR. TEES' CONTINUOUS GUM-WORK MATERIALS.

Messrs. W. & T. Jamieson have favoured us with specimens of Dr. Tees' continuous gum body and gum enamel. We have worked it in Mr. Verrier's little gas furnace, and although the time has been too short to speak conclusively, we may mention that, so far, the results have been most satisfactory, and that we are under the impression it fuses at a lower temperature than Dr. Allen's with apparently equal beauty of finish. Dr. Tees supplies the gum enamel in three shades, and also makes three shades of a still lower fusing point for repairing when necessary. Our main object in reporting this material now, is to induce any who are at present experimenting in this beautiful work—especially the continuous gum facings—to oblige us with their experience of Dr. Tees' materials, that we may be able to give a fuller and more reliable notice on a future occasion.

Abstracts of Foreign Journals.

DENTAL COSMOS (*December*).

"Scientific Method in Dentistry," an address delivered by Jesse Green, D.D.S., Pres. Penn. State Dental Society. Dr. Green quotes Prof. Jevon's definition of method, and insists that but few men employ method—they fail to discover resemblances or differences. New facts must be seen, recognised as new, and classified and fearlessly maintained against all comers. Let us learn to observe and record truly and without fear, bias or favour. Scientists we may not *all* be, but good, careful, accurate reporters we may aspire to be. Having acquired facts we must reason on them. Without employing scientific method in its entirety we may observe accurately and record trustworthily. Even in common life accurate observation becomes an income of power. Finally this scientific method will sharpen sight, quicken perception, and make the whole man better.

"A Consideration of the Merits and Claims of artificial crown and bridge work," by J. L. Williams, Newhaven, Connect. The writer insists upon the pre-eminence of crown and bridge work as a dental prosthesis over other appliances. Failure in its use has arisen from ignorance and lack of experience as well as the want of that high degree of manipulative dexterity required. The common objections raised against the process are, (1) a tooth with its pulp devitalised acts as a foreign body, and nature tries to cast it out. This is met thus: If the pulp is devitalised by arsenic, which not only kills but exerts a secondary and deleterious action upon the tooth, and if infective germs be allowed to enter an unprotected and exposed cavity, or if the patient be in a cachectic state, his tissues possessing a low degree of vitality, this objection holds, as pus becomes formed and pericementitis and other processes are started. It is otherwise if the pulp is surgically devitalised and the root rapidly treated and plugged at once. This is feasible for the anterior sixteen teeth, possibly for the molars. In this case the pulpless tooth does not act as a foreign body.

To support his view, the writer refers to the embryology of the tooth, to show that the vascular supply of the cementum and dentine are different—remove the pulp you do devascularise the cementum but only partially the dentine, since the dentine receives a supplemental supply from the cementum system, the dentinal fibrillœ being in relation with cement corpuscles. The enamel receives vascular supply through the dentinal system. Experiments are cited to show that the tooth as a whole absorbs, and hence it is assumed that in the jaw after the pulp is removed a circulation of nutritive fluids takes place. "The surgical method" of dealing with the pulp is narrated: A groove should be cut across the labial and lingual surfaces quite close to the margin of the gum, and just through the enamel or a little deeper, unless there is too much sensibility. Place the blades of a pair of excising forceps in these grooves, a little to one side of the centre, and with a quick closure cut off the crown. This exposes the pulp at its broadest part. An orange-wood point, cut to size and shape of pulp is inserted into canal beside it, and driven home with one blow of the mallet. The pulp-remains come away with the point. Then treat the root as you think best, but *plug at once*. Objection (2) to bridge work. That the unnatural strain imposed upon the roots in supporting two or more teeth destroys their attachment to the jaw. This is denied; strain is really less as pressure is equally distributed. Further, bridges are said to be cleanly and not liable to breakage, while they are easily set right if the porcelains give way.

(*To be continued.*)

"Alveolar Abscess," by Dr. Atkinson. [This paper comprises answers to various questions propounded by the Editor of the Proceedings of the First District Dental Society.] Discussing causes of abscess, the writer lays stress upon perverted nutrition and tissue assimilative power, and proceeds to enquire into causation of alveolar abscess, and classifies as follows: Constitutional weakness, which acts by lowering "resistive power." Local causes are: Failure of nerve or blood supply, traumatism; locally-acting poisons; diseases of teeth, causing pericementitis. Dr. Atkinson then proceeds to discuss symptoms of acute and chronic abscess, but as the subject matter is arranged in brief question and answer series, it is impossible to reproduce the gist without reprinting the paper.

"A New Dental Amalgam," by Dr. West, L.D.S., R.C.S., Savannah. All alloys at present in use are declared to be more or less failures. Alloys used for dental fillings are, when in use, under water. Therefore, says Dr. West, while being prepared, they should also be in that state. In ordinary methods the metals are heated to high degrees, and have very dissimilar melting points. In nature all the metals usually employed by dentists exist, combined in more or less definite proportion. Dr. West believes an accurate knowledge of metallurgy will enable factors to imitate these quasi-compounds, and that they being governed by the laws of compounds are more valuable than mere metallic mixtures. He believes that alloys obey the law of combination by multiple proportions. Experiment led him to employ electrolysis in forming the desired compound alloy, and although the methods are not explained we are given to understand that the results arrived at in the use of this amalgam are highly satisfactory; it adheres well; can be made as hard as adamant, &c. Dr. West has never known it to lead to failure.

"Soft and Tender Mouths," by Frank Faber, D.D.S., Philadelphia. The writer has found the methods which are in vogue for fitting dentures to tender mouths to be failures. He believes that soft tender mouths result from absorbed alveolar margins, due to a loose and flabby condition of the gums. This condition arises in cases in which the teeth have not been extracted, but have fallen out from absorption of the alveoli. When the teeth have been forcibly extracted while yet the roots were sound, the irritation which follows, and is maintained by the sharp bony socket borders, causes a condensation of the soft tissues which is absent in the case of other or absorptive teeth-shedding. A case of some severity is narrated in which the gum tissues were so tender as to prevent any denture being worn. After fruitless attempts, phénol sodique was employed as a topical agent with marked success.

An impression was taken, the outside of alveolar bridge of model scraped where the upper edge of band would come, and the surface was scraped at the palatine edge and a thin disc placed on model. Plain teeth were used, those of the lower jaw were set upon the ridge, and the bicuspids and molars projected beyond the upper. These, with other precautions, achieved success.

It is recommended—commence with phénol sodique—make upper and lower dentures upon vegetable base, without an air chamber; use plain teeth, and place them as far as possible under the ridge, mounting the lower teeth upon the ridge, and coupling the plates with spiral springs. Possibly let upper teeth bite inside the lower. Plates to be worn during treatment of soft tissues.

MEETING of American Dental Association. Artificial dentistry and metallurgy was the subject discussed, but no very clear conclusions or practical rules were enunciated.

NEW YORK Odontological Society. Professor E. T. Darby, read a paper upon "Treatment of Children's Teeth."

The teeth are usually neglected in children under ten years of age. This is wrong, for milk-teeth act physiologically; their premature decay causes imperfect mastication, which, in its turn, gives rise to gastric troubles. Early attention prevents pain, ensures habits of cleanliness, valuable in later life.

The difficulties met with by the dental surgeons are said to be: the callous ignorance of parents; the want of confidence in the children because they are deceived at the outset. Small cavities should be filled, superficial caries removed. When the incisors are slightly decayed, the proximal sides should be filed and polished; so with the molars. Large cavities are well filled with gutta percha or phosphate of zinc, which should be used as thick as putty.

Exposed pulps in temporary molars are to be devitalised with carbolic acid and cantharides and then filled. A small tap-hole is to be drilled upon the buccal surface at the free margins of the gums. Free cutting of the distal surface of the second molar on erupting of first permanent molar is recommended. Early removal of temporary cuspids to make room for permanent laterals, is said to be bad, as it checks nature's tendency to increase the growth of the arch.

The writer advocates systematic separation of the young permanent teeth, when commencing caries shows itself, by wooden pegs and polishing the proximate surfaces with emery, &c.; this avoids caries starting from pressure. Gold fillings are pronounced bad in the case of young teeth (below 15) as in itiating pulp-death by thermal changes.

In the discussion which followed, Dr. Kingsley emphasised that after removal of teeth, the back teeth press forward, the front do not work back, hence premature extraction of molars and canines leads to advance forward of the molars and dislocation of the bicuspids upon the canine space.

He doubts that the wisdom teeth possess dynamic power sufficient to cause the forward movement of the teeth, since such occurs after their extraction. Dr. Clowes stated his belief that actual decay exists in the teeth as early as the fourth year, and that actual contact is always deleterious.

FIRST DISTRICT DENTAL SOCIETY, State of New York; incidents of practice. Dr. V. H. Vincent narrated a case of neuralgia, supposed to be due to a filled (gold) bicuspid. Carbolic acid, &c., failing, the tooth was extracted, an hypertrophy of the cement filed off, the nerve canal filled and the tooth re-inserted.

Dr. Atkinson believed many cases of neuralgia were really due to ulcers, which were undetected. He narrated his method of relieving the pain of inflammation by scarifying the cementum.

OHIO STATE JOURNAL (*December*).

"BEST MEANS of preserving the teeth," by M. H. Chappell, D.D.S. [This is a continuation of a report prepared by request of Executive Committee of Indiana State Dental Society.]

Odontolithus (salivary calculus) deposits are, white, green stain, yellow or black. *White* consist of mucus, tissue, debris. Undergoing fermentation, it gives rise to (i) vegetable, (leptothrix) (ii) animal, life (micrococci). These conditions, especially in the young, cause caries. *Green stain* shows presence of infusorial life, and is very prejudicial to enamel.

Treatment.—Polish with fine stones and brush with soapy powder. *Constitutional* causes must be looked to. *Yellow calculus,* favourable to teeth, bad for the gums.

Consequences.—Mal-nutrition, chronic gastric trouble, with nervous depression. *Prognosis* is made according to the time during which the growth has occurred. *Black calculus* may occur even when gum is healthy, it causes recession. *Pyorrhœa alveolaris* causes (i) local: Tartar, but not in all cases.

ii. *Constitutional.*—Excessive use of salt food, mercurials or other drugs, injudicious regimen containing excess of bone-forming matter, so that canaliculi and lacunœ of cementum become blocked. These organisms are not infective, being merely the outcome of the putrefaction which is present. Treatment consists in judicious dieting.

"INFLAMMATION." Galen. Xenia. O. Inflammation excites sensibility and contractility, causing pain, &c. The effusion which follows inflammation is treated in this paper. Summarised, the effusion may be said to consist of—

Firstly. Molecules composed of fatty matter. Secondly. Granules $\frac{1}{2000}$ to $\frac{1}{8000}$ in diameter, a bright spot surrounded by a dark circle. Thirdly. Lymph or exudation corpuscles, compound granules ($\frac{1}{600}$ to $\frac{1}{700}$ in diameter), composed of granules and molecules. Fifthly. Pus corpuscles, multinuclear and less granular than the above. Sixthly. Hyaline or granular matter, and forms of protein. Seventhly. Débris of tissue inflamed. The corpuscles are stated to be formed *de novo* from fibrin, as well as passing through the vessel walls by diapedesis.

Consequences.—May unload engorged vessels and so do good, the effusion being absorbed. If the effusion travels far into the tissues they undergo condensation, and it does harm by pressure, &c. Suppuration, sloughing, gangrene, are described as depending upon severity of irritation and absorbability of the effusion.

THE discussions of the Ohio State Dental Society are reported at some length—dental caries and the ethics of the profession were awarded a somewhat discursive discussion such as would not warrant their reproduction.

REVUE ODONTOLOGIQUE (*November*).

THE official portion is occupied by discussing the proposed removal of the Société Syndicate Odontologique de France to Rue de l'Abbaye. Then follows a letter by Dr. Saussine impugning M. Telschow as a plagiarist.

JOURNAL DES CONNAISSANCES MEDICALES.

"CANCER OF THE TONGUE." *Etiology.*—Age and sex are most important. Epithelioma is rare from 30 to 40, most frequent after 50—the male sex almost always are affected. Lingual psoriasis, thickening of the epidermis, "smokers patches," an affection recently investigated by M. Vidal as "leucoplakia," ought to be grouped with cancer of the tongue.

Leucoplakia in its first stage benign, may cause thickening of mucous membrane (papillomatous). Cauterisation of these patches increases their growth, so that Vidal insists that complete removal should be undertaken as soon as the papillomatous stage is reached. Possibly syphilis is a cause, but too prolonged an anti-syphilitic treatment allows a fatally rapid development of the growth.

Diagnosis.—Only difficult when there is neither ulceration of the tumour nor enlargement of submaxillary glands. *Simple ulcers* heal rapidly. *Tuberculous ulcers*, no preceding tumour which *becomes ulcerated*, as in epithelioma.

Syphiloma.—While epithelioma occurs at the back and sides of the tongue, syphiloma occurs in the thickness of the organ. Prognosis very grave.

Statistics.—15 cases, 12 deaths, 3 cures, recurrence after 3 to 6 months. This heavy mortality is attributable to too long delay in operating; other statistics show that some absolute recoveries occur in cases of early operation.

Dangers of Operation.— Hæmorrhage; falling-back of tongue-stump; inability to take food. These may be met. Elastic ligature (especially for small tumours). Tying thread through stump, and allowing end to hang out of mouth; œsophageal catheterisation.

"THE QUESTION OF A TARIFF for Dentists," by G. C. Cludius, D.D.S. The author, while insisting upon the necessity of some authoritative tariff alike in the interests of the public and the Dentist, foresees many practical difficulties, and finally formulates the question, "Cannot Dentists be placed into various classes, and a tariff be arranged for each class?"

"TEETH-FILLINGS, a thesis for diploma of Medicin-Chirurgien-Dentiste," by Z. R. Weber, Médecin-Dentiste. Glancing at the history of the subject, and commenting sternly upon the barbarism of extracting teeth when they can be stopped, M. Weber points out the serious derangements of hygienic life such a course entails. In treating of fillings, he dilates upon the advantages of tin, and especially for cavities exposed to the grinding efforts of mastication. Tin is stated to become oxidized through the moisture to which it is exposed, which causes very remarkable hardening. Further, tin does not blacken, nor is its effect so diffused as in the case of amalgams.

Amalgams are very useful but should be employed after the method of Flagg and Fletcher, exact and known quantities of mercury being used. M. Weber prefers pyrophosphate to gold for interstitial cavities in the back teeth.

The relative merits of pyrophosphate and gold are then discussed, and on the whole the former appears to be more in our author's favour.

NEW ENGLAND JOURNAL OF DENTISTRY (*December.*)

"DENTITION," by James E. Garretson, M.D., D.D.S. A tooth is developed out of a papilla which is to be accepted as a body *sui generis*. A tooth is only a dermoid structure in so far as enamel is dermoid. There is a primitive groove, but the mucus-membrane does not *dip down* into it, it *dips up*.

"Dentine, cementum, enamel, are resultant from a common secretion, and this secretion lies with the dental pulp." In fœtal life the jaws are planes of cartilage which are overlaid with mucous membrane; between these structures the papillœ, or dental germs, appear.

Where dental germs appear about the sixth week, the alveolar process, with its many pits, serves as a common envelope, and constitutes the primitive dental groove. "The papillœ are not first met with in a groove." The dental germ is composed of congeries of granular nuclei dispersed irregularly through a firm homogeneous blastema. The superadjacent mucous membrane closely hugs the germ forming the *tunica propria.*

Corresponding with the growth of the papilla is that of its alveolar envelope. This envelope is of sub-mucous nature, arising out of cells existing between mucous membrane and the jaw-plate. This envelope necessarily carries with it a second coat or tunic—tunica reflexa. The germ, now increased in size, has become surrounded by a double sac and the tissue which later on becomes alveolar process and gum. The papilla, "now to be called the dental pulp," has between it and its sac a "halitus." When the papilla attains its full size this halitus "is replaced by a more highly endowed production: the work of matured cells. This secretion constitutes the future dentine. Calcification is progressive with secretion."

The formation of dentine completed, that of enamel begins. It is the secretion of the same sac which has escaped the primitive sac. It is moulded against the secondary sac, and modified by the epithelial surface which constitutes the outer face of the tunica propria. Between the enamel and dentine there is the primary sac (composed of mucous membrane). This tunica propria becomes the enamel membrane.

The vascularity of the external sac is simply nutritive, it does not produce enamel. The development of the root is precisely the same as that of the body—pyramidal elongation of the pulp occurs, and by fastening up the crown acquires for itself tunics, *propria* and *reflexa.* Periodonteum is the modified external sac. It is made plain that the enamel membrane is not strictly dependent on the common pulp for its nutrition; it receives it also from the cemental portion of the tunica propria and periodonteum. Dr. Garretson demonstrates these views by illustrations, but the descriptions are clear without the reproduction of these.

"ON CERTAIN MICROSCOPIC ELEMENTS in pulpless and gum-denuded teeth, in their relation to the filling of roots and the re-attachment of the gum-tissue," by Edward Line, D.D.S., Rochester, New York.

Spooner's discovery of arsenic's power of devitalising pulp of teeth, led to the method of destroying the pulp and later, of removing the remains of the dead pulp. When root-stopping became a fine art, many taught that a properly filled root could never cause trouble, in fact, that a tooth which had had its pulp destroyed and the pulp cavity and root or roots properly filled, was to all intents and purposes rendered healthy for all time. This view Dr. Line combats: firstly, experience shows us that such teeth do go wrong, that *pyorrhœa alveolaris* is not infrequently started by them, and, secondly, anatomical facts render such a doctrine untenable. Sections carried through the tooth, just above the highest point of the enamel, show that the organic matrix of the tooth, so far from being confined to the pulp chamber, traverses the dentinal tubules by fine processes (fibres of Tomes.) These intercommunicate by fine lateral processes, and finally communicate with one or more cells of the cemental lacuna. These cemental lacuna cells are in organic structural communication with the peridental membrane.

Now, when the pulp is devitalised, the inner end of these fibres are left as dead points or foci, from which slow but sure death proceeds. When the peridental membrane is reached, *pyorrhœ alveolaris* probably arises—indeed in such cases we habitually find dead matter about the roots of the teeth.

Reaming roots is useful, as it removes the dead ends of the intertubular tissue, and ends of the soft fibres, but does not render the tooth quite free from disease since the "dead line" may be beyond the line of reaming.

Pulp-killing, root-stopping then are good, if efficiently performed, but it must be remembered that they do not restore the tooth to its pristine vitality.

"REMARKS ON THE TEETH and diet," made before the New England Dental Society, by Dr. F. C. Terry, of Milan. Dr. Terry believed the teeth of Americans were the worst in the world until he went to Zürich, then he thought those of the Swiss were worse. He explains this by attributing it to the nature of the food. Both extremes—over-feeding and chronic starvation—he avers, cause teeth-destruction. The women have no time to cook the food, the food is therefore badly prepared. White bread and coffee are both used to excess; hence the peasants suffer from phosphorus starvation. The climate is damp, foggy, and rainy in parts, conditions averse to health. Sour (dry) wines are much used. On the whole, then, Dr. Terry seems to believe that both in Italy and Switzerland, the poverty-stricken peasantry lose their teeth from ill-cooked innutritious diets, and that the rich lose theirs from the other extreme. The Swiss dentists, we are told, are good and well up to their work. This is fortunate in such a lazar-land of teeth!

"Review of Prof. Garretson's address," by Dr. J. L. Williams. This article deals with the elaborate attempt made by Prof. Garretson to formulate a new theory of the formation of the teeth. We have given Prof. Garretson's views at some length above, that our readers may see for themselves what wide departures he takes from the routine doctrines. Dr. Williams, while passing an enconium upon Prof. Garretson as a practitioner, ridicules his views of the development of the teeth and challenges the professor to produce a single section which can support the views he advances, while Dr. Williams volunteers to substantiate the correctness of his—the common developmental doctrines, by means of any number of microscopic preparations.

He stigmatises the "folding-up" of the mucous membrane and formation of the primary and secondary tissues (t. propria and t. reflexa) as mere figments of a poetical imagination, and cites Prof. Garretson's statement about the formation of the enamel as "an egregious error."

MONATSSCHRIFT DES VEREINS DEUTSCHER ZAHNKUNSTLER (*December*).

"Schlenker's Researches into the origin of dental disease." He states the various explanations as to caries, and procedes to describe the views of writers from Hippocrates onward, and advances his own well-digested conclusions upon this important subject. A critical examination of these views enables us to form a tolerably independent opinion on the origin of caries.

We learn from Schlenker that as early as 456 B.C. Hippocrates had found out there was a connection between diseases of the body and those of the teeth, and that certain diseases of the neck and breast were associated with disease in the teeth. He attributed caries to the accumulation of corrupt, poisonous secretions about the teeth. He endeavoured to disperse these secretions through the masticatory muscles and the salivery glands. He traced ulcers of the tongue, and the separation of the gums to broken-off or carious teeth. The view that these noxious secretions caused diseases of the teeth prevailed for a long time. Galen (100 years B.C.) first taught that the teeth should be constantly nourished. He held that disease of the teeth was caused by insufficient nourishment or too high living. High living causes inflammation of the teeth, especially with young people, while in old people the teeth often become weak and brittle through insufficient nourishment. These views prevailed up to A.D. 700.

Paul of Aegina (A.D. 636) cautions against indigestion of the food, which causes breaking out which is very injurious to the teeth, and he gives a few hints upon dietetics.

The chief representative of the Arabian physicians—Ebu Sina, of Avicenna—held the vital hypothesis—that the teeth are living organs—hence he adopts the disagreeable process of boring through the diseased tooth to apply medication to the affected part. He considers further that pulsating toothache is due to over-much moisture at the root of the tooth. Benedette, professor in Padua, believed the milky dietaries to be the chief cause of disease. Peter Fauchard, a renowned Parisian dentist, strove but vainly, to discover a living organism (worm) as cause of tooth disease. He believed there was an external and internal cause for every disease, the one working on the inner surface, and the other on the enamelled outer surface of the teeth.

Ovelgrün put down caries to the strongly sugared hot drinks (coffee and tea), and said that "teeth worms" were the seeds of henbane, left in the teeth after the weed had been smoked, in order to destroy them. Brunners forbids heat, cold, sour drinks, dirt, cru-hing, corroding matters.

Pasch, 1770, asserts that sugar, on account of its preparation with chalk, is hurtful to the teeth, as it has corroding properties, and destroys the teeth as it does the bones. Therefore he forbids hot-sugared drinks, and says that metallic substances and acid juices, which disturb the lime, which binds the bones together, and over-indulgence in tobacco are alike injurious.

Courtois, a Parisian dentist (18th century) held the disturbed circulation in the tooth vessels discoloured the teeth as in caries. According to Bell's opinion, caries arises far oftener from mischievous secretions or idiopathetically than through external causes.

Fox, in 1803, thought that inflammation of the bone caused its death, and led to caries. The bones are thick, and have little vital power, but the naked membrane of the hollow tooth being vascular, is very susceptible to inflammation.

Angermann, 1806, puts down caries to causes general and local. The first being weak, limp, constitutions susceptible to cold; to the latter belong fainting, rheumatism, and toothache, bad condition of the saliva, deficient masticating powers, &c.

Wedl is of opinion that caries arises chiefly from the acid secretions of the gums, which are particularly prevalent among children, gouty people and women, causing the gums to separate from the teeth, in consequence of which caries is more rapidly developed, while in old people it takes a chronic form. It is questionable whether the injury to the teeth is caused by secretions in the mouth or by their decomposition. Wedl also asserts that the *protococcus* found in caries, described by Kleuke, has nothing to do with it. He believes no inner caries exists, the appearance he refers to is an inflammatory pulp disease causing it to die off.

Baüme, 1877, asserts that caries is a chemical process. Certain acids present in sour fruit, wine, acid drinks, mineral waters, preparations of iron, &c., causing it. Although it has been denied that sugar is injurious to the teeth, yet he asserts that caries is prevalent among confectioners and cooks. The sugar forms an acid secretion in the mouth and causes great destruction among the teeth.

(To be continued.)

"THE DISEASES OF DENTITION," by Prof. Widerhofer, Vienna. After describing the ordinary mode of the eruption of the teeth in children, the writer notices the usual causes which delay it—*e.g.*, rickets, hereditary tendency, &c. He passes then to consider the ailments which occur at this epoch. The appearances which precede the cutting of the teeth are various. The jaw, which has a sharp angular and cutting rim before the appearance of the teeth, is curved, the mucous membrane over the coming teeth is swollen and red, with local pain, also signs of fever. It is impossible to predict accurately when a tooth will come through until we actually see it. The ailments which generally accompany the teething period, depend more upon the constitution of the child than upon the physiological fact of dentition. A healthy child does not suffer. A nervous excitable child may suffer much; this is due not to the teething, but to the constitution. Illness may arise during teething, which is serious, but this should be an exception. So what we call teething fever, teething diarrhœa &c., are not to be looked upon as consequences of teething, since they do not usually go even when the teething is accomplished. If the teething gingivitis spreads to the trachea, bronchitis ensues, which has been caused by the catarrh of the mucous membrane spreading to the trachea, so we trace the teething diarrhœa to the spreading of the catarrh, from the gums along the intestinal tract. The gingivitis causes an increased secretion of the salivary glands, especially in the time of development and growth. Teething takes place at a time when the organs of the child are developing with great rapidity; at this time the form of nourishment is changed as the child is weaned, the muscles begin to develope and the child attempts to move its limbs, so that teething takes place at a time when there is great predisposition to illness. Thus we see these illnesses though appearing at the time of teething, are not caused by it, and are to be treated as though they came at any other time.

"Practical Hints to Dentists," by Dr. A. Werner. Beginners generally arrange teeth in an artificial set with great precision and regularity, forgetting that in nature they are seldom found in such a regular form; if he would make them look at all natural he would take care to vary their size. One rarely sees an even set of teeth, and then only in the young. Even at the age of 20 or 30 years the teeth change their position slightly, they separate from one another and the older the people grow this is the more observable. If a man wishes to make a natural looking set of teeth he will observe these little irregularities.

Dr. Werner states at the second dentition the middle incisors appear first; they find so much room they spread out, so that when the outer incisors appear their place is already partially filled up. There is an inclination of the smaller incisors to grow inwards, either to the right or left. These press on the crown of the other incisors causing them to crowd. While the canine milk tooth still remains, the first bicuspid appears, its larger predecessor leaving plenty of room for it, while the canine tooth is crowded out, its predecessor having been smaller. This first bicuspid is inclined to project from the other teeth, and at the same time presses on the neighbouring bicuspid, which then presses on the second bicuspid, which had had more than its share of space. The same obtains in the lower jaw.

In order to set artificial teeth with a natural appearance one must first place the two great incisors straight, or the least bit inclined to one another, then the small incisors leaning somewhat inwardly, afterwards the canine teeth projecting outwards, both in the lower and upper jaw. The form of the teeth is scarcely ever altered, however irregular they may stand. The central incisors are often longer than their neighbours, and the eye teeth must be longer than the lateral incisors. If the appearance when finished should be somewhat unpromising, it will be found when placed in the mouth that the irregularities will seem much less remarkable. In choice of colour for artificial teeth, a light colour for the young and darker for older persons will be found best, as a whole set of light coloured teeth would in the mouth of an elderly person appear very unnatural. Beginners must at first expect much criticism from the public, but will eventually find most people are thankful to have a natural looking set of teeth.

Natural teeth shine only when looked at quite close, artificial, on the contrary, can be seen shining at a greater distance. Of course a Dentist would never place a blue white between two yellow whites, or a light between two dark ones, and it is not good taste to use very small teeth ; extremes should be avoided, and he is the best artist whose teeth attract the least attention.

The shape of the teeth depends on the build of the man ; short, robust men have generally short teeth, and tall, thin people have long, narrow teeth. One of the first faults discovered in artificial teeth is defective mastication, for many teeth already in the mouth so imperfectly meet the artificial ones that they are of little use in chewing food. In such cases people have no control over the mastication of food, and often swallow larger quantities insufficiently chewed. As such people gradually lose their teeth more and more, mastication becomes still more difficult, and with the absolute want of teeth the food can no longer be chewed, whereupon an undue secretion of saliva takes place.

Chewing is not always impossible with an absolute want of teeth, as they sometimes fall out in quick succession, sometimes slowly, it depends upon this whether the gums can or cannot be brought near enough together to perform the office of mastication. When a great number of teeth which serve for mastication have to be extracted, it will be seen that the patient cannot in all cases bring the toothless jaws together, and that on closing the mouth they often remain the same distance apart. But if the teeth are gradually lost, so that first the grinders and then the front incisors come out, the upper incisors which their antagonists had kept back can now be pressed forward. When artificial teeth are necessary, it is best not to postpone their adoption, since the parts become rigid and the patient less tractable as age advances. At whatever stage dental science may have arrived, there will always be cases in which it will often be impossible to accomplish what is expected and especially because a plate is indispensable. The less cumbersome this plate is, the sooner the patient will become accustomed to it, and in these cases the metal plate is the best.

Dental News.

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

The Second Ordinary Meeting of Session 1883-84, was held on Dec. 13th, at the Rooms, 30, Chambers Street —ANDREW WILSON, Esq., L.D.S.Edin., President, in the chair.

The minutes of previous meeting were read and approved.

The SECRETARY stated that in accordance with instructions received at last meeting he had sent by post in all 196 copies of the President's Address, with appendix, to those members of the profession in Scotland whose names were on the register, members of the Society being omitted, as they were already in possession of the Transactions. He also laid on the table a duly signed nomination paper in favour of Squire W. Allen, Jun., D.D.S , 65, Queen Street, Edinburgh, which had been approved in council.

Mr. BIGGS then exhibited specimens of continuous gum work, after Verrier's mode, and, with Mr. W. B. MACLEOD, testified to the usefulness of that process, and the ease with which it could be accomplished after a little practice, both gentlemen stating that the gas furnaces were quite sufficient to produce and maintain the heat requisite for the fusion of any case.

Mr. JOHN S. AMOORE, L.D.S. Eng., then read the following paper, which was profusely illustrated by diagrams and microscopic preparations:—

MR. PRESIDENT AND GENTLEMEN: A little more than three years ago I read a paper on the subject announced for to-night's consideration, before the Students' Society of the Dental Hospital of London, and much of what I have to say to-night may be found on referring to their Transactions. I have, however, been working at the subject for some time past, especially at the structure and development, which is entirely new to me, and have made several additional dissections, microscopic preparations, and diagrams, which will, I hope, illustrate more clearly the matter in hand. The subject is perhaps somewhat out of the usual line of those arranged for our discussion here, but I think it is very interesting to study the forms of teeth and dental apparatus which we meet with in the lower grades of the animal scale, and to notice the points of resemblance, especially in their development, which they bear to the teeth of fishes, and through them to those with which we are more immediately concerned.

For a moment we might refresh our minds as to the position that the sub-kingdom mollusca holds in the animal kingdom, and the nature of its contained classes. In the lowest group, the protozoa, including the amœbæ and sponges, a definite mouth can scarcely be said to exist; in the next group, a distinct mouth is present, but no teeth; in the annuloida, however, we find an insolated genus, possessing teeth very closely allied to those of the vertebrates, and of which I hope to speak at a future time. Among the annulosa we find teeth; but not so constantly nor I think so perfect as in the next one, our subject for to-night, the mollusca, which is placed by zoologists at the head of the invertebrates.*

Looking at their structure as a class, we find them animals with a soft body enclosed in a muscular skin, and usually protected with a shell of some description, although in some specimens, such as the common garden slug and the cuttle-fish, the shell is internal, and, in the latter of these, is familiar to us as dentists in the form of "cuttle-bone." They have all a heart, a vascular and nervous system, and special organs appropriated to the five senses; and the highest class, cephalopoda, possess vessels corresponding to the aorta and vena cava; they have representatives of the kidneys, as well as large and well developed eyes; the greatest mass of nerve matter, as is usual in this sub-kingdom, surrounds the gullet, and is protected by a cartilaginous plate, which sends out processes over the eyes, while the auditory sacs are enclosed in its substance, a foreshadowing of the cranium of the vertebrata. Most of the classes contain members very familiar to us except the pteropoda, which constitute a group of delicate, fairy-like creatures, abounding in northern latitudes, where they afford food for the whale, and are only met with by ordinary folk in our museums.

The lowest class we can dismiss without further trouble, as they do not possess any dental apparatus whatever; the other four are, however, possessed of an odontophore or tooth bearer. This is a ribbon-like strip, varying in length in the different genera, in the longest about an inch or an inch-and-a-half, and in the smallest extremely minute. Throughout its entire length it carries rows of hard glossy teeth, arranged in the different species in eminently characteristic patterns; at the anterior end the teeth will be seen to be blunted and broken by wear, while at the other extremity they are colourless but perfect as to shape, as they emerge from the developing sac in which the posterior end is lodged.

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* Nicholson's "Zoology."

The odontophore consists essentially of four parts—the skeleton, the subradular membrane, the radula, and the extrinsic and intrinsic muscles. The skeleton consists of two cartilaginous cushions, well shown in the limpet; these are grooved in the middle line, in which is placed the subradular membrane, resting upon and covering them in part, and continued throughout the entire length of the odontophore ; this in turn supports the radula bearing the teeth. There are two sets of muscles to work this apparatus, and the *modus operandi* is simple. The intrinsic muscles connect the radula with these cushions, and are attached some to the upper and some to the under surfaces, and it is evident that, by the alternate contraction of these two sets of muscles, the radula will be caused to glide backward and forward over the ends of these cushions, and thus to serve to rasp anything with which it is brought into contact; and as the teeth are all arranged pointing towards the gullet, the food thus rasped off is conveyed into the mouth. The extrinsic muscles, well shown in the whelk, connect the odontophore to the side of the head, and thus serve to protrude or withdraw the whole apparatus. The radula itself usually forms a triple band, a central strip or rachis, and two lateral tracts or pleuræ, and in most works on molluscan literature the dental formula is given for the different genera ; thus, if there were two teeth on the central strip and five on either side on the lateral tracts, the formula would be given as 5.2.5. The rachis rarely carries many teeth, but upon the pleuræ in some species, such as the common "top" (trochus cinerarius), the teeth seem to be almost numberless.

A capital opportunity for observing the method in which the odontophore is used is easily obtained. If a bell glass be filled with water, and placed in the sunlight, the sides rapidly become green, owing to a growth of incipient vegetation. This is a favourite pabulum for the water snail common to our ponds and ditches, and if one be introduced it will soon crawl up the sides of the glass, and then, if closely watched, the mouth will be seen to open, the jaws separate, the odontophore is protruded, the teeth glisten as they pass over the glass, and the radula, with its load of confervœ, is withdrawn, and the mouth closed again, the whole operation barely occupying two or three seconds. After advancing slightly, the process is again repeated, and the observer cannot fail to be struck by the rapidity and neatness with which it is done.

(*To be continued.*)

APPOINTMENTS.

Mr. Fred. Canton, L.R.C.P., M.R.C.S.Lond., L.S.A., L.D.S.Eng., has been appointed Dental Surgeon to the Dental Hospital of London, *vice* Mr. A. Hill, L.D.S.Eng., resigned.

Mr. W. F. Cornelius, L.D.S.Eng., has been appointed Dental Surgeon to the Infirmary for Teignmouth, Dawlish, and Newton.

Mr. W. T. Elliott, L.D.S.Edin. and Dub., F.C.S., has been appointed House Surgeon to the Birmingham Dental Hospital.

Mr. Harry L. Pillin, L.D.S.Eng., has been appointed House Surgeon to the Dental Hospital of London.

Mr. S. C. Buckland has been appointed Assistant House Surgeon to the Dental Hospital of London.

VACANCIES.

Dental Hospital of London, Leicester Square.—Assistant-Dental Surgeon. Applications to the Hon. Secretary, G. H. Ibbetson, by Jan. 14th.

St Thomas's Hospital.—Junior Anæsthetist. Applications to the Treasurer by Jan. 10th.

OBITUARY.

On Dec. 22nd, at his residence, 3, Wellesley Villas, Croydon, Edwin Williams, late Member of the Council of the late College of Dentists of England, and of the Odontological Society, in his 64th year.

DEMONSTRATIONS AT GLASGOW.

On Saturday, the 15th ult., Dr. J. C. Woodburn, Bath Street, Glasgow, gave a clinique in the art of Gold Filling at the rooms of Messrs. Carruthers and Liddle, the Scottish Dental depôt, to a large and enthusiastic audience, there being over 60 dentists present. The demonstration was performed in a very artistic and praiseworthy manner, and the facility of his manipulation, combined with the excellent manner in which the filling was done was thoroughly appreciated by all present.

In the course of the evening Mr. John Foulds, L.D.S., Bath Street, demonstrated the process of the continuous gum, which turned out a thorough success and as regards workmanship and appearance was pronounced by all to be perfect.

Mr. Cumming, Senr., proposed a vote of thanks to Dr. Woodburn, and Mr. Melville proposed the same to Mr. Foulds, both speaking in very landatory terms of the manner in which the demonstrations were performed.

After a vote of thanks to Messrs. Carruthers and Liddle for their kindness in giving their rooms for the occasion, the meeting dispersed, having experienced a very instructive and enjoyable evening.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

Dental Pathology at College of Surgeons.

To the Editor of the "British Journal of Dental Science."

Sir,—Having handed in to the curator of the Museum of the Royal College of Surgeons the specimens of dental pathology kindly sent to me by members of the profession, I now desire to express my warmest thanks to these for their contributions, and to you, Sir, also for having published my appeal which produced them.

I am happy to be able to report that the number of preparations so presented exceeded one hundred, also that a large proportion of them were of considerable interest and value, so that a very important addition has been made to this section of the College Museum, and therefore it can be no longer said that dental pathology, as there represented, is a reproach to us. I am also in hopes, from what the curator has told me, that the specimens will appear in an appendix to the new Catalogue now in course of publication. I am, &c.,

Alfred Coleman.

Holly Lodge, Streatham.

The Dental Benevolent Fund.

To the Editor of the "British Journal of Dental Science."

Sir,—Will you permit me to avail myself of your pages as a means of addressing the general body of the dental profession.

The notice that I send with this letter shows that the Dental Benevolent Fund is now fairly established. That it should satisfy everybody in all particulars would be too much to hope for, since its very existence is regarded by some few people as a doubtful advantage. It may, however, be regarded as a fair beginning to a good enterprize, and the chief point of interest will be to find out the measure of active support that it will receive from the four thousand gentlemen registered under an Act of Parliament as Dentists. The enactments that produced registration and compulsory education, raised the practitioners of Dentistry into the charmed circle of professional life, giving them as a branch of medicine, the right to claim kinship in thought and culture with the Church, the Law and the rest of the learned professions. Is it unreasonable to expect that those who have availed themselves of the privileges of this class distinction will quite as readily take upon their shoulders the responsibilities attaching to their improved legal and social status? It would be but a sad continuation of a remarkable history of progress if we were found to possess only the dry bones of legal protection and social prescription without that true instinct of professional life—consideration for others.

It is quite possible to misread the lesson of passing events, but it seems to me as if the story of dental incorporation were the philosophic "history in little" of human development in its social bearings. We first combined for mutual encouragement; we next opened two hospitals for the sake of charity and two schools for the sake of education. We followed this by rigid enactments to protect the foolish and to encourage the studious, and now as a climax to a great enterprise, in which self-sacrifice has been the dominant spirit of our leaders, we are endeavouring to make provision in the future for the men, women, and children who may from any cause fall upon evil times, and need the help of those, who if they do not regard themselves as professional brethren, have missed the lesson that the history of the last twenty-five years has been teaching them. If the Benevolent Fund fail for lack of interest or adequate or representative support, it will be a sad blot upon our professional records. It will seem as if we were not ripe for the times in which we live, and that our leaders had legislated in advance of our requirements. But I do not think the four thousand practitioners of this kingdom will let us fail. Here at least we can have no jealousies, for we plead in the sacred name of Charity.

There seems a fear that false pride may prevent some helping because they cannot give as largely as their neighbours. If there be such, might I suggest that subscriptions and donations could be sent with initials or any fanciful title that may be chosen. Mr. Woodhouse and myself would be scrupulously careful to respect all such confidences.

All I urge is, let us have spontaneous, wide-spread and sympathetic support.

Christmas tide is a good season for generous deeds, and I trust that with the opening year I may be able to announce a hearty response to this appeal on behalf of the Dental Benevolent Fund. Yours faithfully,

OAKLEY COLES, *Hon. Sec.*

18, Wimpole Street, W., Dec. 10th, 1883.

[This letter was received too late for publication in our last issue.—ED.]

In accordance with the resolution passed at the last annual meeting of the Association, the following gentlemen have been appointed officers of the Fund and members of its Committee of Management:—

Chairman.—John Tomes, Esq., F.R.S., President of the Representative Board.

Trustees.—Sir Edwin Saunders, Mr. James Parkinson, and Mr. Richard Rogers, of Cheltenham.

Treasurer.—Mr. Alfred Woodhouse.

Committee of Management.—Messrs. J. Dennant (Brighton), S. J. Hutchinson (London), S. Lee Rymer (Croydon), W. H. Waite (Liverpool), and Oakley Coles (London), *Hon. Sec.*

All communications on the business of the Benevolent Fund should be addressed to the office of the Fund, at 40, Leicester Square; subscriptions and donations should be made payable, and addressed to Alfred Woodhouse, Esq.

OAKLEY COLES, *Hon. Sec.*

Mr. A. O'MEARA, of Simla, India, has given a donation of £3 3s., and promised an annual subscription of £1 1s. to the Fund.

"BRAUN'S METHOD OF WORKING VULCANITE."

To the Editor of the "British Journal of Dental Science."

SIR,—Will you allow me to answer through the "*Journal,*" the many queries I have received with regard to my New Method of Working Vulcanite. Some fail to grasp the process entirely, and ask whether I mount the teeth on a tin or lead plate, so for their benefit I explain that I presume they mount their teeth on wax and vulcanise off the model. If the model or duplicate is used it is only necessary to proceed as in plate work, using rather more wax, and to prevent the section of the reverse slipping, V shaped guides should be made or two wires inserted; if the latter they should be shortened before screwing up finally to allow the section to fall back.

Some complain of the "immense amount of superflous rubber," this may be avoided by covering the reverse with thin sheet tin nicely smoothed instead of collodion, and if anyone still fails to understand the method I must ask him to re-read my instructions. Yours truly,

H. C. BRAUN.

Kilburn Square.

To the Editor of the "British Journal of Dental Science."

Sir,—A few days ago I was surprised to see a flaming advertisement, occupying a prominent position in a railway station, with the name of a L.D.S. R.C.S. England, attached to it. I thought it would be the best plan to acquaint the College with the fact, in order that it might immediately put a stop to such a nefarious practice on the part of one of its licentiates. I am also surprised to find he is a member of the Odontological Society. I enclose a copy of the reply from the Secretary. Comment on my part is unnecessary.

Yours &c., "Anti-Humbug."

"*Royal College of Surgeons of England.*
"*Lincoln's Inn Fields, W.C.,*
"*21st day of December,* 1883.

"Sir,—In reply to your letter of the 20th inst., I have to acquaint you that although advertising in the manner referred to by you is greatly to be deprecated, it is not in the power of this College to take any steps in the matter.

"I am Sir,
"Your obedient Servant,
"Fred. G. Hallett, *Assist. Secretary.*"

To Correspondents.

Answers to Correspondents.

G. H. Pickburn, Newcastle.—We cannot undertake to offer legal advice to our subscribers: we recommend that the opinion of counsel be taken.

"Admirable Crichton."—Unsigned letters cannot be taken into consideration.

"Dental Reform."—We cannot agree with our correspondent that the publication of his letter would promote the aim he has in view.

G. J. Clarke, Worcester.—We do not think the matter of sufficient general interest to warrant publication.

L. Stephenson.—As each depôt makes its own alloy probably no standard is obtainable; but most likely any will inform you the quality on application; some is made with pure platina surfaces.

BOOKS AND PAPERS RECEIVED.

"American Journal of Dental Science," "Calender, 1883-4, Dental Hospital of London and London School of Dental Surgery," "Chemist and Druggist," "Dental Cosmos," "Dental Luminary," "Dental News," "Dental Record," "Deutsche Monatsschrift f. Zahnheilkunde," "El Progreso Dental de la Habana," "Giornale di Corrisp. des Dentisti," "Glasgow Medical Journal," "Journal of British Dental Association," "Independent Practitioner," "L'Art Dentaire," "L'Odontologie," "Monatsschrift des Vereins Deutscher Zahnkünstler," "New England Journal of Dentistry," "Ohio State Journal of Dentistry," "Pharmaceutical Journal," "Practical Dentist," "Progrès Dentaire," "Repertorio Dental," "Revue Odontologique," "Scientific Californian," "Southern Dental Journal," "Transactions of the Ohio State Dental Society," "British Medical Journal."

British Journal of Dental Science.

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THE PAST, PRESENT, AND FUTURE OF MECHANICAL DENTISTRY. *

By L. P. Haskell.

When your committee requested me to prepare a paper for this meeting, and the subject was called for, I said it might be "The Past, Present, and Future of Mechanical Dentistry." So I will offer for your consideration, in a few words, some thoughts, intended to awaken inquiry, and provoke discussion upon this subject.

While there have been, during the last thirty years, great advances made in Operative Dentistry, in its material, instruments and methods, it is true that during the same period there has been little or no progress made in Mechanical Dentistry, so that practically the past and present of this branch of dental science, during this epoch are synonymous terms.

The cause of this condition of things has been mainly owing to the introduction of vulcanized rubber, by means of which a horde of quacks have foisted themselves upon the community, and cheap John, "$8 set" shops have been made possible. To such an extent has a demand been created for these cheap sets, it has discouraged the profession generally from recommending and urging upon their patients the use of a better, healthier and more artistic mode of inserting teeth, requiring more expensive materials, and greater mechanical skill and artistic taste, but of course, producing a piece of work of greater intrinsic value.

A little more than thirty years ago the use of plaster-of-Paris for impressions began to come into general use. There has been nothing better for reliable impressions, in *all* cases, introduced since.

Thirty years ago a partner of mine, in Boston, Dr. D. H. Goodno, after much experimenting for a suitable metal for dental dies, using zinc, tin, type metal, fusible metal, brass and iron, at last tried "Babbitt metal," then but little known, and it remains to-day the *only* metal that has all the requirements of a dental die, viz.: non-shrinkage, hardness, toughness, smoothness, and melting at a low temperature, so that plates swaged upon these dies fit the mouth as they do the plaster cast; seldom is a second die required. And yet, our dental colleges, with one exception, I think, and the great mass of the profession, still plod along in the use of zinc with all its annoyances.

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* Read before the Illinois State Dental Society, held at Rock Island.

Thirty years ago, the profession were just abandoning the use of spiral springs for retaining plates in the mouth, and beginning to use atmospheric pressure for that purpose; the plate was swadged to fit the plaster cast, sometimes raising it slightly over the hard palate. To-day no better method exists.

Thirty years ago, metal plates were used exclusively, and to-day they are the only suitable material, in all respects, for artificial dentures.

Thirty years ago, "gum sections" were carved for each case, and mounted on gold plates, and were used very extensively throughout the Eastern States. But to-day the *moulded* sections have taken their place, and the result is a stereotyped, stiff and unnatural looking system of artificial teeth.

Thirty years ago, Dr. John Allen brought to the notice of the profession his "Continuous Gum Work," and it remains to-day unchallenged as the only perfect method of constructing artificial dentures, and I must confess I see little room for improvement.

Thirty years ago, it required at least a fair degree of mechanical skill to make and insert a set of artificial teeth. To-day the merest tyro can buy a set of "gum sections," a piece of rubber, take an impression, and make a so-called set of teeth But it is sickening to witness the result, as one moves along the street, enters the public assembly, or the social circle. "Artificial teeth" written everywhere. This is the Present.

What is to be the Future? It is to be just what an enlightened, progressive profession shall choose to make it.

To make it what it ought to be, it will be necessary to create a public sentiment that shall demand something besides rubber or celluloid, as the best, or even a good material for plates. Let your patients know that these vegetable bases are, to a greater or less extent, injurious to the mouth and often to the stomach; that thousands of mouths are ruined by their use, in consequence of the undue absorption of the alveolar processes, always induced, to a greater or less extent, by the non-heat-conducting qualities of these materials; and also the more serious effects often produced by the poisonous qualities of the colouring materials of red vulcanite. Then the dental colleges ought to impress these facts upon their students. More time should be devoted in these institutions to instruction in the practical details of the laboratory, even at the sacrifice of some of the dry details of theories about matters of little or no importance to the student; more instruction in *metal* work, and less in vegetable bases; simplifying processes, and abandoning obsolete methods and ideas.

More attention should be paid to the artistic, or the æsthetic requirements of mechanical dentistry; then we should the oftener witness teeth selected and arranged as nature would have them, the contour of the mouth restored, and harmony of the features re-established.

It would be better for the interests of the profession if there could be a division of practice, so that it would be an object for dental students, so disposed and having a taste for the mechanical department, to prepare themselves for the exclusive practice of this branch of the science.

I would not entirely dispense with the vegetable bases, for the reason that many are unable to afford anything better, but would advise their use only for that reason. And, when used, advise the use of plain teeth, as by that means more artistic results can be obtained.

PULPLESS TEETH AND THEIR TREATMENT WITH PERMANGANATE OF POTASH AND CAMPHOR.—A correspondent of the "Dental Luminary" strongly advocates the use of permanganate of potash and camphor in treating pulpless teeth. He says: "Never use carbolic acid or creosote upon opening a tooth where the pulp is dead. After using permanganate of potash to syringe it out with, I penetrate far enough to clean the canal perfectly. I use spirits of camphor. I would say that when I open a tooth where the pulp has been dead for a long time, I very seldom attempt to clean it perfectly at the first sitting, for, in extracting teeth of that character where they have been broken down, I have almost always found an abscess at the end of the root, or at least a thickening of the periosteum, showing that it was in an unhealthy state; and finding it in that condition, I have thought that if I penetrated the root to the apex, trying to make a perfect cleansing of it before I had got it under treatment at all, I was very liable to get an irritation that would end in an ulceration and suppuration of the tooth or the periosteum; and therefore, as I have said, I very seldom make or try to make a perfect cleansing, if the root is filled with decayed matter, at the first sitting. Almost always the dressing that I put on is camphor, after using permanganate of potash."

OUR FUTURE WHEN QUALIFIED.*

By PEYTON LEVASON.

MR. PRESIDENT AND GENTLEMEN: I don't think my subject to-night will need any apology as it is one which concerns us all so very nearly. I take it, that we, as students of a noble profession, look forward to the day when we shall obtain our diplomas, and shall be at liberty to start for ourselves in the exercise of our profession. I suppose we all have some dim ideas as to what we intend to do when we have got safely through the hands of our dear friends the examiners, but as our ideas of commencing practice must of necessity at present be embryonic, I have thought it might be useful to embody in a short paper, a few hints as to the when, where, and how a man should set up his tent. Of course, gentlemen, I speak metaphorically, and do not suppose for a moment that you think of following the example of a certain medical gentleman who happened to visit the town where I was articled, and who literally set up his show in the chief square of the town, with a grinning skeleton on either side, and paraded the town every day in a well appointed four-in-hand, and a pair of bagpipers behind; nor yet to follow the example of a French lady who visited the same town in a gilded triumphal car, and extracted teeth at the moderate rate of 300 per hour, at a nominal fee of sixpence per tooth. Before going further, I would like you for a moment or two, to consider the diploma itself; and here I wish to raise a point for discussion this evening. It is a point on which I have many doubts, and consequently have not attempted to settle it in this paper. Should a man wishing to practice dental surgery content himself simply with the diploma in dental surgery or should he take another degree? At first sight this may not appear to be within my province to night, but as it may influence a man's future, in a great degree, I should like to hear the point well discussed. Will another degree assist a man in his practice; in fact, will he be any the better Dentist for it? Will it repay him for the extra time and money spent in obtaining it, other than the satisfaction of having obtained it, or would it have repaid him better to have devoted his money to getting into practice after obtaining his licentiateship? For my part I am inclined to think that if a man intends to practice in London, or any other of the larger cities, a second degree will stand him in good stead; but that if he intends practising in the provinces, he may content himself with the licentiateship. Leaving this point now in your hands for after discussion, I will proceed to consider the case of a man who has obtained his diploma or diplomas, as the case may be. Well, gentlemen, there is only one course open to him, and that is general practice. We have not the choice, as our sister profession has, of appointments in the army, navy, or a civil service, or a chance of any lucrative hospital appointments; and our profession being in itself a specialism, we cannot become specialists in any branch. Certainly one man may be distinguished for his skill in regulating deformities of the mouth, and another may be equally distinguished for his execution as a cohesive gold filler; but even then he will combine his special *rôle* with the other elements of general practice, and will stand out more as a shining light to his professional brethren, in that one particular branch, than as a specialist to the general public. To return to our first point, I wish to consider the time when a man should commence practice. Should he after finishing hospital career immediately rush off, buy the latest thing in novelty chairs, fix up his door-plate, and consider himself in practice. I think decidedly not, for one or two reasons, for though he has spent five years in obtaining his diploma, he will find that there are many small details to be learnt in his profession which he will only learn in the surgery of a private practice. To illustrate my meaning clearly, I will, if you will allow me, remind you of what he has been learning in those five years. He has spent three years in acquiring the mechanical details of the profession, and then came his two years' hospital practice, in which he has learnt to fill and extract properly; but what about the art of applying and articulating in the mouth the artificial work he has learnt to make? He probably knows nothing about it, for I take it that it is a rare thing for a man to allow his articled pupil to be much in the surgery. This is only one point, but it is a most important one, as I think I am not far out when I say that mechanical Dentistry is the backbone of every Dental practice. Again, in taking impressions of the mouth, he will find he has a good deal to learn as he will probably not have had much opportunity in practising it, and his few regulation cases at the hospital will not have taught him very much.

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* Read before the Students' Society of the Dental Hospital of London, Dec. 10th, 1883.

Dentistry, gentlemen, is an art, and most probably a man who can restore the mouth to its original beauty by his faultless mechanical skill, will rank higher in the estimation of the public than a man who keeps a patient several hours building up a bicuspid or a molar with cohesive gold. You must not think for a moment that I am depreciating cohesive gold filling; but I feel strongly that there is a tendency in many students to neglect their mechanical work for the more interesting work, perhaps, of gold filling. Then, again, there are many little details to be acquired in managing a private practice and private patients, so different from hospital patients, that I am sure you will understand them without my enumerating them. What then will be best for him to do? Undoubtedly to take an assistancy with some good Dental practitioner, who will not make a special operator of him, that is, keep him constantly, for instance, at cohesive gold filling, but will put him *au fait* as regards general practice. This is what he really wants, as he will be gaining experience, observing the general principles on which a practice is managed, probably saving a little money towards getting into practice, and he will be able to look round him for a good opening where he may start for himself. A man who has a little capital would, of course, reap a double advantage from an assistancy if he could get one with a view to partnership, as he will be gaining his experience in a practice which will eventually become his own, and he will work harder to gain this experience, knowing that he will reap the after benefits, so to speak, when he becomes a partner.

My next point is, where shall he practice? And here I feel my task to be a little more difficult. Of course every man must be guided by his own individual circumstances. If he has extensive influence to back him up in any town he will most probably start there; and I suppose that generally speaking, there are more men, amongst those wishing to start, who have some influence at their back than those without any. Accepting this view of the case, we have nothing to do with those who have influence, but must look round and see where the man without influence may start. I think that at present there is room nearly everywhere, as the market is not particularly overstocked with dentists anywhere. Certainly not with dentists holding diplomas, excepting perhaps, New York. I have been told that every second house there is a dentist's office as they term it, but I presume we must accept this statement *cum grano salis*. At present there are about 250 dentists, holding diplomas, practising in London, so that I should think, considering the vast population, there was still room here, though of course we must not overlook the large number of dentists practising without diplomas.

In the provinces there are about 350 dentists with diplomas, while Scotland and Ireland have 50 between them. Considering the number of dentists practising in the United Kingdom, or rather the number of dentists on the Register, the proportion of those holding diplomas is small. Speaking from my own slight experience of various towns and of gentlemen whom I have known making a start for themselves, I think there is still room in our own country for men who are content to wait a little and work hard. On the other hand he may emigrate. I have no doubt that there are many good openings both on the Continent and in our own Colonies. Australia, however, of all these seems to present the best opening. There are, as far as I can find out, only two dentists with diplomas in the whole of Australia, and I have been told by many gentleman who have been in Australia that there is a great demand for good dentists there. Of course, we cannot lay down any strict lines by which to guide a man where to practice; he must be guided, as I said before, by the influence at his back and by his inclination. Before leaving the subject of influence, I must refer, at the risk of a smile or two, to the subject of early marriage. Will an early marriage help the young practitioner onwards or retard him? Of course much can be said on both sides. It has been argued that the wife's influence through her friends and relations will materially help the practice on; but I am inclined to think that her influence will only bring a number of her friends and relations who will expect to be attended professionally at reduced fees, and I think the young practitioner will find enough to do to keep himself at first, without burdening himself with a wife and family.

Lastly, having considered when and where he shall practice, I must now say a few words as to how he is to manage his practice. He will, of course, have to wait for some time at first, and his capital saved during his assistancy will now be useful to live on till the patients arrive. Fortunately for our profession, our diploma forbids advertising. I recollect that at the time of the last meeting of the British Dental Association at Plymouth, one of the local papers had a long article in it about the young practitioner, and a most affecting article it was, and drew a heart-rending picture of the poor young man, sitting in his surgery with his head bowed down with grief, waiting for the patients who never came simply because he did not advertise. Considering that the larger half of the paper was advertisements, I have no doubt they had an interested motive in publishing the article. The upshot of the affair was, that there was a very able letter in the next day's issue from an eminent member of the Association, candidly telling them that they knew nothing about the matter. While speaking of advertising, I may say that I was told quite recently on good authority, that it is not considered advertising is in any way derogatory to either the dental or medical profession, in France or Switzerland, for a gentleman leaving his practice for a short time, to announce the fact in the public press, and let his return be known through the same medium. The young practitioner, not being able to make his fame known by advertising, must be content to wait for a short time, and when patients do begin to come, if he is fair towards them, and honest of purpose, and gives the whole of his skill and attention to each case as it comes before him, he will soon build up his practice; gradually, of course, at first; but the recommendation, or in other words, the influence of his first patients, will soon begin to tell, and he will have the satisfaction of seeing his care and skill repaid.

Courteousness, kindness, and attendance to the comfort of patients, will do a great deal for a man's practice, and he must always, whatever happens, be patient and never lose his temper; and here he will often have a hard task, for no one but those who have been in practice themselves, can know of the many little daily annoyances that are almost sure to occur. A bad tempered patient, a fidgetty patient, a patient who seldom keeps his or her appointments, and little accidents that will occur now and then in his work, all apt to annoy him; but he must control his temper, and in time he will not regard them so much as annoyances but as tests of his tact and skill.

I should now like to make a short digression, to say a few words about hospital appointments. With regard to our own hospital appointments, while students here, I think they are invaluable, as they not only increase a man's experience, but the responsibility attached to the post will give him some insight into management which will be useful to him in his practice, and will begin that lesson with regard to his temper, of which I spoke just now. As to dental appointments to infirmaries, dispensaries and workhouses, when in practice, they are very useful, I think, to a man's practice, and I am sure they are useful to the institutions themselves, for I imagine we all must have seen the bungling and mangling, I can call it nothing else, that goes on where no competent extractor is appointed.

Having started in practice, and now I must speak generally, let us do all we can to keep up the préstige of our profession. Let us not only work for our living, but also take an interest in the welfare of dental science, by becoming members of those associations which are open to us as dentists, and by interchange of thoughts and ideas. And let us not remain at the same point as when we left off studying for our professional career, but keep pace with the times, recollecting that we can never know too much about Dentistry.

In conclusion, let us follow in the steps of such great men as adorn our profession, and though we may not be able to distinguish ourselves as they have done, let us all show that we have the interest and welfare of our profession as much at heart as they have had it.

ANÆSTHESIA.

By KENNETH MCALPIN.

(*Concluded from p.* 16.)

All anæsthetics now in use affect the sensory nerves alike, yet their reflex effects upon the motor system, and upon volition, are in some cases widely different. For instance, chloroform and ether produce entire muscular relaxation. Nitrous oxide does not always, as sometimes it produces rigidity of the muscles, and that peculiar form of rigidity called opisthotonos, which is remarkable for the backward curve the body assumes. Bromide of ethyl produces a spasmodic action, very like that peculiar to strychnine poisoning, and most of the other agents produce spasms either tonic or clonic. Nitrous oxide gas also occasionally causes bleeding at the nose, and in some cases even hæmoptisis.

Anæsthesia may be divided into four stages: excitability, insensibility, loss of motion, and total paralysis. The second stage is generally sufficient for most operations. To know when insensibility has been produced, the conjunctival surface should be touched with the tip of the finger. If the desired end has been attained, then there will be no reflex action, shown by the contraction of the orbicularis palpebrarum muscle. But there are certain precautions to be observed when touching the eye, or else the anæsthetist may be misled, and think he has produced narcosis before such is really the case. He should remember that the conjunctiva loses its sensibility on repeated touching, so should first touch one eye and then the other, and he should also remember that one side may lose its sensibility before the other, so he should touch both eyes before he come to the conclusion that he has given enough of the anæsthetic.

The time it takes to get a person under the influence of an anæsthetic depends, of course, upon the agent used, and upon the person the agent is used upon. Nitrous oxide gas produces anæsthesia in about one minute. Ether, when given in an open inhaler, will not have the desired effect under eight or ten minutes; but when it is given in Clover's portable inhaler, if preceded by a few inhalations of nitrous oxide gas, insensibility can be produced in from two to three minutes.

Chloroform, when administered to infants or old people, produces anæsthesia in about ten minutes, or sometimes less. Persons of great strength and heavy drinkers, take a larger amount than other patients, and consequently are a longer time before they become narcotized. In warm weather it does not occupy so long as in cold weather to produce anæsthesia.

Patients may not be kept under the influence of nitrous oxide gas longer than one minute; but when ether or chloroform is administered they may be kept under their influence for three or even four hours if occasion requires; though no patient should ever be kept unconscious longer than can be possibly helped, as shock is likely to ensue. Shock may be partially due to the anæsthetic and partially due to the operation, and is developed to a greater or less extent, as shown by extreme prostration and coldness. In such cases of shock, if a warm water bottle be placed to the cardiac region, and an egg-and-brandy enema given, it will in most cases prove efficacious.

Besides the phenomena sometimes noticeable in patients under an anæsthetic, that I have mentioned in a former part of this paper, sometimes exanthematous patches show themselves on the skin when ether is inhaled. This is caused by the paralysis of the vaso-motor nerves by the ether, and if there are any eruptions on the skin ether will generally make them more noticeable.

Anæsthesia does not overcome the whole nervous system at once, but by a gradual process. The first great nervous centre it attacks is the cerebral hemispheres, then the spinal cord, then the general ganglionic system, and lastly the respiratory ganglia. The first stage in anæsthesia is hyperæsthesia and excitement. There is an increased flow of blood caused by an accelerated action of the heart, and a consequent dilatation of the capillaries, and contraction of the iris of the eye. The hyperæsthetic stage, which is sometimes very violent in patients under chloroform, is the time that danger is particularly imminent in cases of lesion of the heart. For, if there be fatty degeneration of the heart, and the muscular tissue is consequently weakened, or if there be marked diminution of its left ventricular capacity, the great sympathetic nerve being stimulated will cause spasmodic struggles, which may result in an embolism, and the muscular coats of the arteries become weakened, or the heart itself become paralyzed through its extraordinary efforts to respond to the exertion demanded. Death will then occur through spasm of the heart, or paralysis of the sympathetic nerve. A choking sensation, or feeling of suffocation, frequently attended with violent coughing and spasmodic struggles for air, generally attends the hyperæsthetic stage. These symptoms may arise from two causes. The spasmodic struggles are caused by the medulla, when it has been deprived of its proper quantity of oxygen. Coughing arises from irritation of the terminal filaments of the glosso-pharyngeal nerve, which is proved by the loss of taste, and also by the fact that if tracheotomy be performed, and the vapour of the anæsthetic introduced through the tube, the coughing does not arise. The anæsthetic next attacks the vaso-motor system, and causes a contraction of the arteries. Then the extremities begin to lose sensibility: this is indicated by a tingling sensation which gradually extends to the vital organs.

Anæsthesia affects the nerves in the following order. First it reaches the terminal filaments of the olfactory nerve, which causes the patient to lose the sense of smell. After the loss of smell comes loss of sight, loss of ability to control the muscles of the eye, and a consequent enlargement of the pupil, caused by paralysis of the ciliary and recti muscles. About the same time as loss of sight comes loss of sensation of the integument of the face and eyelids, and loss of ability to control the muscles of the mouth and tongue. The communicating nerves of the seventh and eighth pair next become paralysed, causing the patient to lose the sense of hearing. The tenth, eleventh, and twelfth pairs of nerves are the last to succumb.

The great danger in the administration of chloroform is from the arrest of respiration, caused either by paralysis of the sympatheic nerve, or as is more often the case, by the blocking-up of the smaller bronchi by mucus, through the destruction of the sensibility lining them, and the consequent cessation of the ciliary motion of the villi, which carries the mucus forward until it is expectorated. Death may occur from shock. This is sometimes though rarely seen by the patient having died before any anæsthetic has been administered, the fear of the operation causing death; and in some of the more serious operations the shock has caused a lowering of the pulse, which is only a degree removed from fatal syncope.

Death may occur from cerebral hæmorrhage, the diseased blood-vessels giving way under the increased blood-pressure.

Death may also occur from syncope or asphyxia. It generally occurs from syncope. In nearly all cases of death from ether, the bronchial râles and stertorous breathing precede death, the latter symptom being due to paralysis of the pharynx.

In cases of threatening asphyxia the lower jaw should be thrust forward and the tongue forcibly drawn out of the mouth by the tongue forceps, so as to give freer respiration. Sylvester's method of artificial respiration should be immediately commenced and continued until all hopes of recovery are past. Every chance should be given to the patient to obtain fresh air, such as having a cool draught of air passing through the room, and only letting those people stand round him who are necessary to help.

Tracheotomy should be performed when traction upon the tongue does not relieve the threatening asphyxia, when there is an obstruction in the trachea, or in case of œdema or spasm of the glottis. It can easily be perceived whether air enters the lungs or not, by the healthy appearance of the face, and by hearing the air passing to and fro. One of the external jugular veins may also be opened to relieve the venous congestion, and the chest flicked with the end of a wetted towel.

In cases of syncope, artificial respiration must be immediately commenced: percussion applied to the heart by means of a wetted towel, galvanism applied over the region of the heart or subclavian triangle, and the vapour of ammonia applied to the nostrils. Inversion of the body, by lowering the head and elevating the feet, should always be tried, as this has been known to produce consciousness when all other methods have failed.

Mr. President and Gentlemen: While thanking those gentlemen who have written papers on this subject before, and from whom I have culled the whole of my information, I must also thank you for the very patient hearing you have given to a most uninteresting and jumbled paper.

Alveolar Abscess Simulating Catarrh.—A case of this character, which came under Dr. Marshall's observation, was that of a gentleman, aged 30 years, who had been under treatment for catarrh for a year and a half. Coming to have his teeth cared for, the central incisor, on the right hand side, was found to be devitalized and tender; it always gave trouble whenever a cold was taken. It was also noticeable that the catarrhal discharge was always from the right side. He opened into the tooth and found, after cleansing it, that water could be forced through it into the nostril. The tooth was treated, and, with its cure, the catarrhal trouble disappeared. Another young man, a student of dentistry, had an incisor which had been devitalized by his preceptor. It was neglected and an abscess formed. He also had a discharge from the nose. On examination, the condition of the incisor was discovered, and, on its being treated, the nasal discharge disappeared.

ON THE RELATIONS BETWEEN DENTAL LESIONS AND DISEASES OF THE EYE.

By Henry Power, M.B.Lond., F.R.C.S.,
OPHTHALMIC SURGEON AT ST. BARTHOLOMEW'S HOSPITAL, AND SURGEON TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, ETC.

(*Continued from p.* 1155, *Vol. XXVI.*)

The time at my disposal will not permit me to enter into any details in regard to the mode in which hypermetropia, or long-sightedness, leads to strabismus, but it will be enough to say that the hypermetropic eye is a flattened eye, that in accommodation for near objects great convergence of the eyes is required, and that a powerful and sustained nervous impulse is required in order that a near object should be fixed by both eyes, and that, owing to a defective association between the effort for accommodation and that for convergence, convergent squint is frequently induced.

Other striated muscles that have been noticed as being occasionally affected in a reflex manner by disease of the teeth have been the levator palpebræ and the orbicularis palpebrarum; the former supplied by the third nerve, the latter by the seventh; the paralysis or paresis of the former leading to more or less expressed *ptosis,* the latter to *lagophthalmos.* Ely* has recorded three good cases of such affections, in one of which there was paresis of the orbicularis palpebrarum, with irregular spasms of the ciliary muscle and monocular diplopia. In another there was paresis of the rectus internus and ciliary muscles, and in a third case partial paresis of the third nerve.

An affection that it is not unfrequently observed is that which is termed *blepharospasm* or incessant winking of the lids, the movement being sometimes limited to the orbicularis palpebrarum, but at others extending to other muscles, such as the zygomatici and levatores anguli oris. This affection is well known to be associated with the error of refraction known as hypermetropia, when a powerful effort of contraction of the ciliary muscle is demanded. The impulse emanating from the brain instead of being limited to the nerve supplying the ciliary muscle, has a strong tendency to radiate through other channels, and consequently to affect other muscles; whilst in some instances the secreto-motory fibres of the fifth nerve are excited, and a copious discharge of tears results.

But that similar conditions may be established in a reflex manner by some lesion of other nerves is well shown by a case that was reported many years ago by Von Gräfe, to the Medical Society of Berlin. In this instance the blepharospasm ceased almost instantaneously when pressure was made upon a point situated below the alveolus of the third inferior molar tooth. At this point an incision was made down to the bone, but without modifying the blepharospasm in any appreciable degree. But having then established the fact that compression of the sub-orbital nerve and of the temporal branch of the malar materially diminished the spasm, section of these nerves was performed. The spasm immediately ceased, and the case was thought to be cured, but it re-appeared at the expiration of a fortnight. The section of the inferior dental nerve performed within the mouth ultimately caused the blepharospasm to cease entirely, and it had not re-appeared four weeks after. A case of convulsive tic, as he terms it, has also been recorded by Mr. Mitchell, which, supervening spontaneously, was propagated to the muscles of the neck and arms, and which entirely disappeared after the removal of several teeth.

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* "New York Med. Record," Nov. 11th, 1882.

As additional evidence of the stimulation of other and distant parts of the nervous system on the orbicularis may be mentioned the observations of Claude Bernard; for this experimenter found that section of the sympathetic is followed by partial closure of the lids, and inversely if blepharospasm is induced in an animal by irritating the cornea with some caustic substance it may be removed by galvanising the sympathic in the neck, when the lids open immediately, as by magic.

From the consideration of the influence of carious and painful teeth upon the striated and unstriated muscular tissue of the eye, I pass to that which they may be supposed to exert upon the conjunctiva, cornea, and sclerotic. And I would refer, in the first instance, to the affection named phlyctenular ophthalmia, which is very frequently associated with carious teeth, and which I believe to be often caused by them.

Phlyctenular ophthalmia consists in the appearance of one or more small vesicles, soon bursting and forming ulcers around the margin of the cornea, or on the surface of the cornea, or the sclerotic. Sometimes only one is formed; at others a succession appears. They sometimes produce little or no uneasiness; at others they are attended with great intolerance of light, and abundant lachrymation. The child —for the disease occurs more frequently in children—keeps in the dark during the day, and only becomes lively at night.

The pathology of this disease is tolerably well known. It is believed to result from an inflammatory process, attended with the proliferation of nuclei along the sheaths of the nerve. The nuclei gradually advance towards the surface along the conjunctival, corneal, and sclerotic branches of the fifth nerve, and accumulating on the surface, form, with a little fluid, the contents of the vesicle, and when the vesicle bursts they gradually break down and disappear.

Now in cases of phlyctenular disease I have been accustomed to give minute directions in regard to diet, believing that this affection owed its origin to reflex irritation of the nerves of the eye, consequent upon some disturbance of the stomach and intestinal canal; and to the mothers of the numerous little patients suffering from this affection in our ophthalmic hospitals and departments of hospitals, I have been accustomed, after ordering a brisk purge and some quinine, to say, " Attend to its diet; no sweets, no pastry, no raw fruit. Give it bread and milk, finely cut-up meat and potatoes," and I am perfectly satisfied with the result of that treatment; but it has occurred to me that the view I have hitherto entertained of the ætiology of the disease may be erroneous, and that instead of the stomach, the teeth are perhaps the organs at fault. It is easy to comprehend that the mastication of raw apples, candied lemon and orange peel, jam tarts, and the like, lead to the impaction of acid and fermentable substances in the cracks and crannies of the teeth, especially if these are carious, and that remaining there for hours or days, if the due cleansing of the mouth after food is neglected, such particles may set up inflammatory troubles which may propagate themselves along the nerve and lead to what we term reflex phlyctenular inflammation of the eye.

No doubt there are many exceptions to the rule that carious teeth and phlyctenula of the conjunctiva are associated, but I have noticed that a large proportion of the children who have phlyctenular ophthalmia have also carious teeth. Surely this is very suggestive of the ætiology of the affection.

The occurrence of inflammation of the conjunctiva in such cases as the foregoing, as Weinberg remarks,* may be explained on two theories: on the one hand, when any organ is under the influence of some stimulus, this influence may modify the nerve filaments which terminate in this organ, and thus occasion phenomena of a reflex nature, either in the eye or elsewhere.

But it may also happen that the irritative process itself, whatever that may be, may propagate itself until it reaches the filaments which excite the neighbouring organ. It is evident that this can only happen when the filaments supplying the affected organs are derived from the same nerve, or when there are anastomoses between two nerves distributed to different organs. The two kinds of propagation, he observes, are well exemplified in the case of a carious tooth. In one instance there shall be well-marked conjunctivitis which resists ordinary treatment. The mouth is examined and a carious tooth is found the very existence of which is unknown or forgotten by the patient, so slight has been the inconvenience he has experienced from its presence. The teeth is extracted, and the conjunctivitis forthwith and spontaneously disappears. This is a case of purely reflex action. But other cases are met with in which odontalgia is present, and in which the redness of the conjunctiva is accompanied with the small phlyctenular ulcers to which attention has just been drawn, with chemosis, and some impairment of vision. The pathogeny of this affection is more complex: part of the symptoms are here due to reflex irritation, but part also to an extension of the dental neuritis to the ophthalmic branch.

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* "Recueil d'Ophthalmologie," Nov., 1882.

In the course of nine months' out-patient practice, Weinberg believes he met with 188 cases of occular disease dependent on dental lesion.

I have some reason for believing that serious lesions of the cornea may be primarily due to carious teeth, and I will venture to give you the heads of a case that I watched with much interest, but which ended disastrously so far as the eye was concerned.

J. F., a stout, ruddy Scotch girl, aged twenty-four, previously healthy and with good family history, suddenly, after exposure to cold, was seized with a sudden sharp pain on left side of face. The vision was then good on that side, but after a few days became dim. A small circumscribed collection of pus formed exactly in the centre of the cornea, and she was then brought to me. She was treated for a few days with quinine and hydrargyrum c. creta, and with atropine drops, no improvement resulting. I performed paracentesis corneæ at the side of the cornea, which the girl bore without flinching. Slight improvement followed. Local depletion, in the form of leeches and blisters, and general tonic remedies, strychnia and iron, were prescribed; but, the case dragging on, I again determined to tap the cornea, and this time passed the needle through the little abscess. The extreme indifference she showed to the puncture attracted my attention, and I then discovered that the cornea was anæsthetic, and that the sensation of the whole region supplied by the ophthalmic branch of the fifth was greatly impaired, though not quite lost. She was a servant, and as the case was likely to prove a troublesome one, she was taken into St. Bartholomew's Hospital under my care. The abscess had now become an ulcer; the cornea was generally hazy; there was much conjunctivitis, but no chemosis. She could distinguish the points of a pair of compasses at a distance of 1·5cm. over right brow, but only at a distance of 4·5cm. over left brow. Special attention was now paid to the teeth. She stated that she had suffered much from toothache, and several carious teeth were found in both jaws, but especially on the left side. Four molars were extracted at once. In the course of a month from this time the cornea had become clearer; some hypopyon previously present disappeared. The iris could be seen, and vision which had been almost lost recovered sufficiently to enable her to count figures, whilst the anæsthesia of the globe almost vanishad. She left the hospital and took a cook's place, but she returned about seven months after stating that the eye had slowly deteriorated, perhaps from exposure to heat, and although there was no loss of sensibility, the inflammation of the cornea and of the sclerotic, and the general discomfort from the condition of the globe, preventing her from doing her work, was so great that I determined to perform abscission, which was done nearly a year after the commencement of the disease, and the girl made a good recovery.

The lesion of the cornea in such a case as this may be referred to its anæsthetic condition; but the question arises, What caused the anæthesia? and I can suggest no cause for it except that the teeth were seriously affected.

I now proceed to the consideration of the last class of cases into which I divided the ocular troubles caused by dental lesions, namely, those in which the reflex action is exerted upon the optic nerve and retina and intra-ocular structures.

And first in regard to the occurrence of *amaurosis;* the most brilliant case on record is one that is now of somewhat ancient date, having been given by Sir William Lawrence, but which is so convincing that I venture to reproduce it here.

"*Case 7. Amaurosis caused by a Carious Tooth.*—F. P., thirty years of age, possessing a good constitution, and enjoying good health, with the exception of pains in the head and limbs, which never lasted long, suddenly experienced, in the autumn of 1825, a violent pain, shooting from the left temple to the eye, and the side of the face: he ascribed it to cold. This pain lasted several days, then lessened, and reappeared from time to time without being sufficiently severe to induce the patient to seek medical aid. In about two months it suddenly increased in intensity, occupying the eye particularly, with a feeling as if it would pass out of the orbit. F. P.

now discovered that he was blind with that eye, and applied to a neighbouring physician, whose treatment, continued for two months, did no good. The pain, however, was no longer continual: it assumed a somewhat periodical character, leaving the patient easy for some hours of the day. At the end of the following six months the pain increased, the cheek swelled, some spoonfuls of bloody matter were discharged by a spontaneous opening in the lower eyelid, after which the swelling subsided, and the pains nearly disappeared, although the blindness remained complete. The discharge was removed from time to time during the following six months, and there was no great suffering. But in the autumn and winter (1826) the pain, particularly in the eye, became so violent that F. P. came to Wilna in the beginning of 1827, determined to have the organ extirpated, if no other remedy could be found. Professor Galezowski found the left eye totally insensible to light, with the pupil dilated, and no other visible alteration. The pain, not then so severe, consisted in violent occasional pricking or darting sensations in the left temple, and parts round the eye. There was discharge from the lower eyelid. The first molar tooth of the left side was carious: it had not caused much uneasiness; and the toothache, when it existed, had not coincided with the pains in the temple and eye. The Professor determined on removing this tooth, and having done so, was surprised to see a small foreign body at the extremity of the fang. When drawn out, it proved to be a small splinter of wood, about three lines in length, which had traversed the centre of the tooth, and had probably ben introduced in picking the teeth. A probe was passed from the socket into the antrum, from which a few drops of thin purulent fluid escaped. The pain ceased almost entirely, and on the same evening the eye began to be sensible to light. Vision gradually improved, so that, on the ninth day, the patient could see as well with the left eye as with the right, after a blindness of thirteen months; on the eleventh day he left Wilna to return to his family."

"I had," says Sir William, "the pleasure of becoming acquainted with Professor Galezowski when he visited England subsequent to this oceurrence. He showed me the tooth and the splinter of wood, and he pointed out two circumstances in the case as particularly worthy of notice: first, that the entrance of the foreign body into the tooth had not been noticed at the time; and secondly, that a local irritation, hardly perceived at the seat of injury, should have affected the ramifications of the nervus trigeminus so violently as to produce amaurosis."

I have met with no other case that is so complete as this; but Caffe* refers to a case in which blindness proceeded from a carious tooth of the upper jaw, and occurred whenever food collected in the cavity; and I have myself recently met with a case in which loss of vision occurred for a few minutes each time that, in clearing the cavity of a carious molar for plugging, the instrument caused pain.

Sir Thomas Watson† refers to the repeated occurrence of blindness cured by the extraction of irregularly arranged teeth. Sudden blindness occurred in a boy eleven years of age. This was immediately cured on the removal of two permanent and four milk molars from a very closely compressed set of teeth; and Garretson‡ reports a case given by Salter. A woman, twenty-four years of age, suffered from violent pain in the right upper first molar, which was accompanied with great swelling of the face; the globe was protruded, and vision was lost. A fistulous opening, from which pus flowed abundantly, existed at the outer as well as at the inner angle of the antrum. The cause of the suppuration in the antrum was the remains of the first upper molar; when this was removed a sound was passed into the antrum and a sequestrum was brought away. This proved to be the antral part of the floor of the orbit, the upper part of the malar bone with the foramen infra-orbitale, and a broad, bony plate of the nasal wall of the antrum. The inflammatory symptoms immediately subsided, but there was no perception of light, and the pupil remained immovable. Five weeks subsequently the pupil began to respond to light, but there was no return of vision. Ophthalmoscopic examination of the eyes showed white atrophy of the optic disks. Gill concludes his essay with the statement that the phenomena which depend upon the optic nerve are attributable to a plastic inflammation, which affects the extra-cranial portion of the nerve. If the optic nerve is destroyed by this means, the blindness is persistent. The oculomotor nerve suffers temporarily only; therefore also there is only temporary rigidity of the pupil. The protrusion of the bulb indicates that the sixth nerve is little or not at all affected. Mr. Gill is doubtful whether to regard the anæmia of the optic nerve as a cause or a consequence of the abolished function.

A case of sympathetic disease of the eyes in consequence of irritation of the dental nerves is given in the "Revue de Thérap, Med.-Chir.," Aug., 1871. The ocular and palpebral conjunctiva of the eyes and eyelids were much congested;

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* "Lancette Française," Aug. 22nd, 1839.

† "London Med. Gazette," fig. 5, 1841.

‡ Virchow Hirsch, *loc. cit.*

the vessels filled to the corneal border. Severe pain was experienced at night; there was considerable photophobia; the head was heavy and painful, tongue coated, appetite bad, pulse small and frequent. The affection lasted five months. Ten leeches were applied to the angle of the jaw, a collyrium of sulphate of zinc and a purgative prescribed, which led to some improvement. After the application of a blister to the back of the neck the pain recommenced. As the left molar was very carious it was removed, with the effect of immediately removing the symptoms, and in the course of a week the patient could use the eye again.

Gill, about the year 1873, read a paper before the Missouri State Medical Association, on "Disturbances of vision resulting from neuralgia of the fifth pair of nerves consequent on dental affections," which I have not been able to procure, but which is translated in the "Deutsches Vierteljahrschrift für Zahnsheitkunde," B. IV., p. 11, and is fully abstracted in the section on "Mund und Zahnkrankheiten," by Dr. Albrecht, in the "Jahresbericht für Gesammten Medicin" (V. Virchow, V. Hirsch) for 1873, B. II., p. 537. The following case is given in this paper. The patient was thirty-three years of age, and in the early part of the winter of 1870-71 began to experience neuralgic pains in the head and face, which lasted to the middle of the summer. The neuralgia extended over both sides of the head, and so far affected the visual power that the patient was no longer capable of reading. In the middle of the summer the neuralgia disappeared, and the vision became normal. In July, 1871, the neuralgia recurred, and coincidently there was diminution of visual power: the patient could only read Jäger No. 16. The pain experienced was especially severe at night. Examination with the ophthalmoscope showed that there was sub-retinal effusion, and that the retinal arteries were ill-defined. There was a well-marked painful spot.

Examination of the apparently sound teeth showed that there was necrosis of the exposed left superior maxilla, but more careful examination demonstrated that the supposed necrosis was only a collection of tartar, which had surrounded the roots of the first and second molars. These two teeth were extracted, and a wide zone of ulceration was found around their roots, and to a smaller extent about the root of the second bicuspid, which after the lapse of a few days was also removed. The neuralgic symptoms immediately abated; the amblyopia, or dimness of vision, was reduced, and in the course of a week the patient could read again No. 6.

Mr. Hutchinson, in one of the early volumes of the Ophthalmic Hospital Reports,* has pointed out that certain cases of amaurosis bear a very close resemblance to infantile paralysis. "Without any warning whatever, without any cerebral symptoms, a patient loses the sight of one eye, and now and then, but very rarely, of both eyes." In some cases he goes on to remark, there is a certain amount of improvement afterwards, but often the amaurosis becomes total and permanent. In some instances the optic disk becomes white and atrophic, but in others it retains an almost normal vascular supply. Most of the cases which had come under his notice were women. In some, evidence of cardiac disease existed ; in others there was none ; and in most he found the *arteria centralis* of good size, so that the hypothesis of embolism seemed to him to have but little support. In several of the best marked cases that he had seen there was a history of neuralgia in the face for a long time before the occurrence of the amaurosis, the neuralgia being usually connected with toothache.

Alexander of Aachen has reported† the following case of amaurosis resulting from dental disease.

A patient, aged twenty-six, had slight myopic astigmatism, which was, however, insufficient in amount to explain the greatly lowered visual power of the right eye. The right optic disk was somewhat hyperæmic. Abstraction of blood was ineffective, and in a subsequent examination the failure of vision was so great that the patient could only read Jäger No. 15. The patient then complained of severe pain in the upper right anterior molar tooth, and observed that it had been for some time periodically affected. The tooth was extracted, and vision almost immediately rose to two-thirds of its normal amount in the right eye, and became quite normal in the left eye.

In this, as well as in other reported cases, the eyes have often been slightly defective originally, and it stands to reason that any sympathetic influence is more likely to be felt by those in whom the functions of the eye are from any other cause impaired ; or perhaps it might be said that sympathetic affections are more likely to be super-imposed upon defective than upon sound eyes. Thus a patient who has perfectly healthy eyes may long resist the depressing influence of toothache, but if his eyes are already congested or exhausted from uncorrected hypermetropia, it is easily intelligible that pain, by depressing the nervous energies, will cause the weakness of the ciliary muscle to be felt at an earlier period.

(*To be continued.*)

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* Vol. IV., p. 382.

† "Monatsblatter f. Augenheilk," B. VI., p. 42, 1868.

Reflections from the Surgery.

A CASE OF TRISMUS DENTIUM,

OCCURRING IN THE PRACTICE OF

Mr. MATTHEW LEEMING, of Lower Broughton, Manchester.

A YOUNG man, aged about twenty-seven, called upon me and requested me to examine his teeth. His head and the greater part of his face were enveloped in bandages. On proceeding to comply with his request, I found he could only open his mouth about three-eighths of an inch, and this was attended with considerable pain. I was informed that he had been suffering from neuralgia and a swollen neck and face for three weeks. The right side only being affected, and the pain was chiefly in the lower jaw.

During the above period he has been under medical treatment, poultices and fomentations being ordered, and he had taken three or four bottles of medicine. As matters grew worse, and he had greater difficulty in opening his mouth each day, he became alarmed.

Having elicited above facts I examined his mouth. I found the right inferior wisdom tooth carious and painful on percussion and gum inflamed. The other teeth on same side appeared normal. With the consent of the patient I decided to extract the wisdom tooth. This I did after experiencing great difficulty in seizing it.

Before dismissing him I introduced a dressing of phenate of soda, and gave instructions for its removal next day, and his mouth to be washed out with warm water.

About eighteen months after the same man put in an appearance, and taking his place in the operating chair said, "I want this tooth taken out." At the same time pointing to one on the left side of the lower jaw. As he seemed so decided in his manner, I asked him why he wished it to be extracted. He told me who he was and reminded me of his previous visit, and that he felt the same symptoms on the left side as he had experienced on the right.

I extracted the tooth, which was a left inferior wisdom tooth, and decayed, but was not tender on percussion.

He told me that his health, both locally and generally, improved, from the time the right inferior wisdom tooth was extracted, without further treatment. That in a day or so he was able to attend to business, but it was six weeks before the action of the lower jaw was perfectly normal, since which time it had remained so.

Having read the communications in your journal on Trismus, produced by dental lesions, I thought the above case might be of some interest to the profession.

STAINING ARTIFICIAL TEETH TO MATCH EXCEPTIONAL NATURAL ONES.

By Mr. William Dunn, Jun., of Florence.

As in the "*British Journal of Dental Science,*" for December last, it is stated that it would be a great desideratum to be able to so stain or colour artificial teeth as to make them exactly represent any exceptional natural ones that they may be required to match, it may interest your readers to know that the means are at command which will enable them to exercise their utmost ingenuity and artistic taste to this end, and to accomplish their wishes with really very little trouble to themselves and to the greatest appreciation of their patients. The process which I have adopted for some time in actual practice is as follows:

Thanks to the exertions of Mr. Lacroix, a chemist, in Paris, we have every requisite colour ready to our hands prepared for porcelain painting and put up in colour tubes similar to all moist artists' colours, which can be obtained of Lechertier Barbe and Co., 60, Regent's Street, London. The colours which I generally use are: yellow, green, dark blue, brown, pink and black; all these colours are readily dissolved by essence of turpentine or essence of mint, when with a fine camel hair pencil they may be blended in any combinations, and the surfaces, necks, tips or other parts painted, tinted, lined or otherwise made to perfectly coincide with any natural teeth however irregular or particoloured they may be. Of course in most instances it is necessary to grind or disfigure the artificial teeth before painting them, and thus may be represented the worn down teeth of advanced age which so frequently show the dark brown tinted dentine within a circle of paler enamel, or the dark ring of enamel with the lighter centre; the stained crowns of the bicuspids and molars under similar circumstances, the dark necks of denuded teeth, although the enamel surface may remain a good colour, the blue-black appearance of carious teeth, either stained naturally or from amalgam stoppings. If naturally, it is very effective to grind notches out of the artificial teeth to represent decay and stain within and around the parts so disfigured. Honey-combed teeth may also be well represented by similar treatment. Indeed, there is practically *no limit* to the capabilities of the materials in skilful and artistic hands.

I find a *white* pallet advisable for mixing the colours.

After the teeth are painted they should be placed on pieces of platina or platina gauze, or in separate crucibles, for care should be taken that they do not touch one another.

If a whole set has to be coloured it will be found convenient to fix them in a row in a mixture of two parts of plaster of Paris and one part of fireclay—which will not crack in firing. In this way a more uniform tint can be given than if done separately.

For firing I prefer the handy and simple but effective little gas furnace invented by Mr. Verrier, in which it takes about five minutes. The sufficiency of heat can easily be determined by watching until the crucible becomes a cherry red. Care must be taken not to overheat otherwise the colours——especially the lighter ones, will disappear. These colours are as a general rule unalterable, but the operator must bear in mind that in passing through the vulcanizing process they are apt to become a little darker, and regulate his tints accordingly. At the same time the darkness can be corrected, if necessary, by applying fine sandpaper or pumice powder.

With the pink colour a very fair imitation of the gums can be produced; quite efficient in most cases of a single tooth, to prevent that disagreeable and unsightly appearance so often seen, of a long tusk, rather than tooth, between two short teeth.

With a little attention and practice anyone may soon master the initial difficulties of this painting work, and few, once having seen the advantage of the results, will again be content with the old method of using the nearest colour attainable.

STEEL, in wire or sheets, may be readily tinned by thoroughly cleansing and immersing in hot oil or tallow and then dipping into melted tin.

EXPLOSION OF A TOOTH.—A patient recently came to a dentist to have a tooth extracted. It was the right inferior first molar, and was split half in two from crown to root. Upon inquiry, it appeared that for several days the tooth had been paining him very severely—growing longer and being extremely sore to the touch. The pain continued to increase until the night previous, when, all of a sudden, something seemed to crack in his mouth, and the pain at once ceased. The patient thereupon discovered, with his tongue, that the tooth seemed to be divided. No doubt the splitting was occasioned by an accumulation of gas in the pulp cavity.

British Journal of Dental Science.

LONDON, JANUARY 15, 1884.

ADVERTISING DENTISTS AND THE ROYAL COLLEGE OF SURGEONS.

In our last issue will be found two letters, one written by a Dental Surgeon, the other by the Secretary of the Royal College of Surgeons of England. Our correspondent naturally feels aggrieved that a brother practitioner should demean himself by employing railway station puffs; but it is not here that his cause of complaint ends. Upon his appeal to the authorities at Lincoln's Inn Fields he is told that although the diploma of the advertiser was issued by the College of Surgeons, yet that august body is powerless to prevent advertising by those who hold the L.D.S. R.C.S.

This unfortunately is the case, the College of Surgeons, whatever may be its feeling upon the subject, is quite unable to take action.

The position in which the College of Surgeons is, is peculiar, and we venture to think is unsatisfactory. It cannot be said that as the L.D.S. was a supplementary diploma, it merely forms a guarantee of the fitness of the recipient for practice *as far as knowledge goes*, for all members and fellows are practically in the same predicament. Advertising, unless very gross and coupled with heterodoxy of the most unmistakable stamp, is not under the bann of the College. Within the memory of our readers a notorious case occurred, but we fear it would not require a very searching enquiry to obtain instances of bare-faced puffing which pass, and necessarily so, unchecked and even unnoticed.

In all this reform is surely needed, courts of enquiry are not to be lightly undertaken, but until some very definite opinion is expressed by the College of Surgeons, which shall convey a strong censure upon all advertising surgeons be they dentists or not, we fear but little can be done to check the evil. It is most astonishing that the inexpediency of advertising is not perceived, that personal and private reasons should lead men of good social standing to issue catch-penny broadsheets when by so doing, as they cannot fail to perceive, their action brings unspeakable disrepute upon their brethren and themselves. We have always insisted that the main difficulty lies in the utter deficiency of preliminary culture which dentists *may* possess. We are far from hinting that even a large percentage are imperfectly versed in general education, but we maintain that such education should not be a matter of chance but should be obligatory. Men who value their social position would eschew advertising for their own sakes, and this is as we would have it. Even were the College of Surgeons of England to possess the right to prohibit those who hold its diploma from advertising, would it employ its power wisely or at all? Advertising is now-a-days a fine art and a science combined. Men can advertise in the most refined way and elude even the most vigilant anti-advertiser's censure, and so only the mere trade-posters which we regret to find are so common among practitioners of dentistry, would be open to cavil. To repress posters would be a great and salutary step, but we would far rather see the *inclination* for advertising eradicated and become replaced by a professional self-respect, such as should belong to all right-minded men.

It is salutary at times to scrutinise that section of the community in which our lives are cast. An occasion for such a scrutiny, was presented at the annual dinner of the National Dental Hospital held in November.

The speakers—men who have grown with the profession, and who in many instances have by their influence more or less widely modified its course during the last decade or so—brought before their hearers many subjects, the importance of which cannot be overrated. Mr. Christopher Heath, in adverting to the highly important position which "students' societies" take in preparing their members for after life, broached a topic of real interest and significance.

None but those who have served as members, committeemen, or officers of societies, can understand the training which the holder of such posts gains. Temper, moderation, conciliation, acuteness alike are forced upon him. He learns to speak in public (no small gain), he further learns to formulate his ideas, to offer for discussion his views, and does so expecting acute and searching criticism, and comes prepared to rebut it.

To multiply societies where *bona fide* work is done, is to advance the interests alike of the profession and of science. It seems a pitiful fact that the junior members of the profession do not recognise the vast advantages societies offer to them. To most men time is very precious, and few only can find leisure for reading on technical subjects, so that their knowledge decreases as their experience mellows. It is to combat this untoward state of affairs that the learned societies exist. The busy man can there hear the leading men on each technical point, can gather from their lips a *resumé* of all the work that has been done since his student days. Nor do the uses of the societies end here. To be in the swim with the scientific lights of our calling tends to maintain us in the true career of the scientific practitioner, and to excite to rivalry. Passing on to the theme to which Mr. Walker addressed himself, we may refer to what we have elsewhere said concerning the wholly inadequate way in which the dental section of our general hospital system is at present conducted.

It is indeed lamentable for all concerned that such a lamentable loss of material is permitted. If, as is alleged, efficient teaching would require increased expenditure, it is undoubtedly short-sighted policy on the part of our general hospitals, since the dental students' fees would recoup all such outlay and leave a margin to boot.

The London Hospitals are not the only ones at fault. Indeed in London, where special hospitals are open, the matter is of less import than in the provinces where usually one or two general hospitals at the most are sufficient. In these a large dental *clientele* could be worked up and opportunities of great value offered to students and practitioners in Dentistry. There certainly could be no worse argument offered against admitting students to a general hospital than that they would be looked down upon by their surgical associates. Such folly is beneath serious consideration, and would, we can hardly doubt, be eradicated by the authorities at the various hospitals. Perhaps the most important question brought upon the *tapis* was that of amalgamating the Dental hospitals of London. Mr. Oakley Coles seems to favour this step, and adduces arguments which cannot fail to carry weight, but the departure is too serious to be criticised until it has taken some more definite shape.

DENTAL BENEVOLENT FUND.—All communications concerning this fund should be addressed to Mr. Oakley Coles, at the office of the Fund, Leicester Square.

FEW FORMS OF PAIN are more distressing than that caused by toothache. At the Birmingham Police-court George Robotham, a commercial traveller, was charged with attempting to commit suicide by cutting his throat with a razor. The accused said that he had had toothache for a month, and during the whole of that time he had not had a single night's sleep. He could not, he added, stand it any longer. The magistrate discharged him with a caution.

METHOD OF SOLIDIFYING CREOSOTE.—A writer in the "Revue de Therapeutique," gives the following useful hint. Ten parts of collodion to fifteen of creosote, make a gelatiform mass which is easily manipulated, and avoids the troublesome overflowing of the neighbouring parts by the surplus of creosote.

THE practical paper on "Is the use of Brown Bread conducive to the Growth of the Teeth," should be ascribed to Mr. Jos. A. Clarke. The last sentence should read "foods are tooth formers."

"TEETH AS KEEPSAKES."—The following curious paragraph is forwarded by a correspondent, it appears in the "Newcastle Weekly Chronicle:"—"*Annals of the Northern Counties*, 1780:—July 10th. Died, at an advanced age, in Newcastle, Mrs. Gomelden, a gentlewoman of liberal education, a great adept in natural history and philosophy, and a generous benefactor to the poor. This lady published a work entitled 'The Medley,' the nett profits arising from which, amounting to £53 10s. 7d., she gave to the Lying-in Hospital. She is said to have had remarkably fine teeth, which she carefully preserved as they fell out through age, and presented them, set in rings, with her engraved portrait, to her friends and acquaintances. She fell in love with the name and fame of Captain Cook, and wished to accompany him round the world, but was disappointed."

CURIOUS ABNORMALITY.—An unusual abnormality has been found in a young man with an otherwise good set of teeth. Between the two molars and the wisdom tooth on the cheek side, a bicuspid had broken through, and as it was supposed to exercise a pressure on the other teeth it was extracted. The crown of the tooth was quite normally developed, though the root was short, and curved and crooked.

ANGLO-SAXON TEETH.—In the course of levelling the ground for the erection of a station at Whitchurch, Hants, in connection with the Didcot, Newbury, and Southampton Junction Railway, a group of burrows has been discovered, considered to belong to the Anglo-Saxon period. The bodies, twelve of which have been exhumed, had been placed at full length, upon the back, at an average depth of about 18in. below the surface of the ground, without any trace of coffins; nor was any implement, pottery, or ornament found to be directly associated with any of the burials. Judging from the remarkable similarity of the skulls, in all their characteristic features, to those found in an extensive Anglo-Saxon cemetery at Knitbury on the river Kennet, and presented to the Oxford University Museum, it is thought that these graves may be assigned reasonably to the same period. It is remarkable that the teeth are wonderfully preserved, and although much worn there is scarcely one that exhibits any sign of decay. In a very few cases have any been lost before death, the full number being retained in the majority of the jaws, which are very much developed. If history be true, our Saxon ancestors were not careful of their digestions, and yet their teeth seem to have stood the trial better than ours do.

ODOURLESS COD LIVER OIL.—One is so often called upon to administer cod liver oil to children to whom the fishy smell and taste are hateful, that a really odourless emulsion is a desideratum. A writer in "Revue Odontologique" recommends cod liver oil one thousand parts to be added to four parts of Norwegian tar, which has been mixed and dissolved in twenty parts of liquid ammonia. This is to be heated until nearly all the ammoniacal vapour has come over, and then after filtration a few drops of essence of aniseed should be added.

ROYAL COLLEGE OF SURGEONS OF IRELAND.—Mr. Theodore Stack was last week elected Professor of Dental Surgery in the Medical School of the above College.

FOOD BETWEEN THE TEETH.—Dr. Miller writes: "If there is any place in the dental arch where food continually lodges and is allowed to remain, there sooner or later, a softening or decalcification of the tissue of the teeth must occur, the extent of the softening being without doubt, inversely proportionate to the density of the tooth. I removed yesterday, a lump of food about as large as a small pea from between the necks of two bicuspids, and placed it upon a piece of blue litmus paper; the paper instantly showed the presence of a tolerably strong acid. The food was subsequently examined, and found to consist chiefly of starchy substances with some muscular fibres. The acid in this case was, I think, unquestionably the same as that which is always developed when saliva and starchy substances are left in contact at the temperature of the oral cavity, and is capable of softening dentine with readiness. The surfaces of the two bicuspids had lost their natural smoothness and could be easily penetrated with a pointed instrument. Both teeth are doomed to decay. This is not an isolated case. It is in fact, very seldom indeed, that an acid reaction does not exist, whenever, in cavities of decay or elsewhere, we find remains of food."

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to put one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

READY-MADE BACKINGS FOR FLAT TEETH.

Messrs. W. and T. Jamieson have shown us some ingenious ready-made backings for flat teeth for vulcanite work. They are so constructed that they may be bent to form not only a back to strengthen and protect the tooth itself, but also form a tail or strengthener to run back into the rubber and strengthen that in shallow bites, and thus prevent the teeth being easily bitten off. To overcome the difficulty of the difference of distance of the pins in varying teeth, the little plate is slit in the centre, and so can be most easily adapted to any pins, be they wide or narrow.

RITCHIE'S NEW OPERATING CHAIR AND CHAIR BRACKET SPITTOON HOLDER, WITH ATTACHMENT FOR TUMBLER.

Since reporting this new chair it has been specially covered to be suitable for ordinary surgery use, and may now be more properly described as being, not only an exceedingly inexpensive and efficient chair for hospital or dispensary use, but a really substantial and elegant piece of dental furniture, that would be an ornament in any room in which it were placed.

Mr. Ritchie has also added a simple but suitable arrangement by which his Improved Bracket Table and Spittoon Holder now carries a glass also. With this addition the whole forms a compact apparatus capable of easy attachment to most chairs.

Literary Notices and Selections.

NECROSIS OF THE UPPER AND LOWER LEFT MAXILLA. LOSS OF THE UPPER JAW.

By Dr. Leon Dufour.

During the course of an epidemic of measles which prevailed at Fecamp in the spring of 1883, many cases showed signs of great malignancy, others presented anomalous complications.

Among the latter, we may include four cases of necrosis of portions of the upper or lower maxilla.

Three of these cases recovered under different modes of treatment, and were only followed by the elimination of small portions of the external tables of the affected bones; in the fourth case, the child lost a large part of the upper left maxilla, and also a small piece of the lower jaw. The following account refers to the last case.

B., a young child, aged 3½, brother and father both of a lymphatic temperament; very lymphatic itself also; never had any illness except slight infantile affections; dentition perfectly normal.

This child caught measles, which ran a very rapid and regular course. Eight or ten days after the child had recovered, the mother brought it to me and showed me its gums, which were now affected, complaining at the same time of the fœtid smell of the child's breath.

The little girl was pale, had lost her appetite, was in great pain, slept badly, was very feverish.

The breath had a most repulsive smell.

The left side of the face was swollen; the skin normal, neither shining nor spotted. The underlying tissues were quite free, not œdematous, and retained their functions, notwithstanding the swelling at the back.

On separating the cheek from the lip, the gums were seen to be much redder than usual. They were very puffy, especially above and to the left. On the right side the edge of the gum was in a healthy condition, though somewhat inflamed; but on the left it was ulcerated for several millimetres above the edge of the alveolus, and allowed the left upper maxilla, deprived of its periosteum, to be seen. On percussion with a metallic instrument, the bone gave quite a characteristic sound. The ulcerated border of the gum was of a greyish tint, and had slightly affected the mucous membrane of the cheek on a patch two or three centimetres long and a few millimetres wide. The teeth were quite loose in the alveoli; one appeared ready to fall out and was therefore removed. Below and to the left there were the same appearances, but not so well marked.

The respiratory cardiac and digestive functions were all normal, with the exception of some fever and the loss of appetite.

The child was put on a strengthening régime, and stimulating lotions of hydrochloric acid were ordered to be used at short and frequent intervals.

After three or four days of this treatment, the odour of the breath was less overpowering, but the ulceration of the edge of the gum had increased, and a larger portion of the upper left maxilla was now exposed.

The child was still feverish, did not take its food well, and was in constant pain; before long the breath became as offensive as before, both to the parents and to the little sufferer herself.

The spontaneous elimination of the bone appeared inevitable. Lotions containing tincture of cinchona were ordered instead of those with hydrochloric acid, together with a tonic and antiscrofulous diet.

Three weeks after the first appearance of this complication the upper left maxilla was so loose that it was removed with the greatest ease by means of an elevator. The quantity of blood lost was no greater than after the extraction of a tooth.

From this day forwards, the child's spirits returned, the breath lost its fœtid smell, and the appetite and general state became as good as before.

On the other hand, however, the ulceration of the lower jaw, though but slight and on a level only with the alveolo dental border, went on increasing; it ended two or three weeks afterwards by the exfoliation of a small osseous lamella of the anterior and posterior external plates of the bone around the first molar.

The necrosed portion which was removed, consists of the left upper maxilla from the alveolar border to the bottom of the sockets. Its extent corresponds to five teeth, the two incisors, the canine and the two molars.

The ascending process of the jaw has disappeared, but the lower portion of the nasal duct is still to be seen. On the upper border, are the following of two of the permanent teeth. Part of the tuberosity of the jaw has been removed. The only portion of the palatine process which remains is that in contact with the alveolar border.

The cavity in the mouth caused by the loss of the bone, is now bounded in front by the healthy cheek, behind by half the arch of the palate.

On the other side the condition of things is perfectly normal.

The result is a flattening of the left cheek with a deep external furrow, which causes the left angle of the mouth to be drawn upwards and produces a great deformity, more especially when the child laughs.—*Gazette de Hôpitaux.*

Abstracts of Foreign Journals.

INDEPENDENT PRACTITIONER (*December*).

"Caries of the Human Teeth," by Dr. W. D. Miller, Berlin. — (Read before the American Dental Society of Europe).

Methods employed.—1. Study of the structure and chemical composition of the teeth, and nature of the agents and reagents by which they are surrounded in the human mouth. 2. Macroscopic examination of thick sections, both dry and recent, of carious teeth. 3. Carious changes in the teeth tissues studied microscopically. 4. Study of chemical changes which have occurred in the carious teeth. 5. Portions of sound teeth were subjected to conditions such as in the mouth would produce caries.

At present three theories of dental caries are advocated: (*a*), Inflammatory; (*b*), Chemical; (*c*), Parasitic; (*d*), Dr. Miller's theory, that caries is the outcome of decalcification by the action of acids. Mere alkalinity of saliva goes for little since the cavities of the teeth may contain acid. When amylaceous or saccharine material is mixed with saliva, an acid always results. The nature of the food not only determines the reaction of the saliva, but also the rapidity with which an acid replaces an alkaline reaction. Meat causes at first an acid, then a neutral, and, lastly, an alkaline reaction.

Method of Testing the Reaction.—Remove excess of moisture from cavity, carefully remove all food debris, then apply litmus to the *deepest* part accessible.

Experimental caries.—Several teeth, free from caries, were broken up and immersed in saliva and bread sop at 37 deg. C. They remained in this mixture for three months; the mixture was renewed five times. The fragments then examined had taken on the look of ordinary caries: all the tooth structures were invaded. Mixtures containing coffee and other foods gave the various colours found in caries. These experiments are described in some detail and are taken to show the rapidity with which tooth tissue is acted upon by the acid of tooth caries is universally proportional to some multiple of the density of the tooth. Experiments are cited which go to show that calcium salts do exist in solution in carious teeth. The statement that free acid cannot exist in contact with tooth tissue must be accepted with caution. The sound enamel remains wholly uninjured when exposed for some time to acid; but in the teeth the calcium seems to be closely in association with the organic part of the tooth, and any perversion of nutrition causes their severance. Microscopically, also, the teeth so treated resemble carious teeth. Analysis made of carious dentine give 26 per cent. of lime salts, the same results occur when sound teeth are prepared as above. The decalcification decreases inversely as is the distance from the surface. The part which fungi play in promoting caries is then considered. It is uncertain at present the extent and nature of the fungus. Dr. Miller, however, believes that, while decalcification by acids is the initial step, destruction of the decalcified tissue by micro-organisms is the second phase in dental caries.

Primary Caries of Enamel or of Dentine is independent of Micro-Organisms.—In primary caries of the cementum—a rare disease, micro-organisms exist but do not penetrate deeply. In opposition to the inflammatory theory it is urged:—all the usual evidences of inflammation are absent:—all causes which should give rise to inflammation when practised upon the teeth, fail to give rise to inflammation; and, lastly, in artificial, and therefore—dead teeth, carious action takes place. The changes which occur subsequently to the decalcification are due solely to micro-organisms, no inflammatory changes whatever occur. Summarized Dr. Miller's experiments show.

1. The contact of saccharine or amylaceous food (not to speak of nitrogeneous food) or a solution of sugar or starch, in saliva, kept at body temperature, invariably gives rise in four or five hours to a strong acid reaction, due to the generation of an organic acid.

2. There must consequently be in the human mouth a constant though variable generation of acid, because of the impossibility of keeping the mouth perfectly free from food and from solutions of amyloids in saliva, which penetrates cracks, pits, and fissures, or are held by capilliary attraction between the surfaces of teeth in contact, and there become acid by fermentation.

3. The degree of acidity depends somewhat upon the length of time which has elapsed since partaking of food, and will be found greatest on rising in the morning.

4. A cavity of decay in which saccharine or amylaceous

food has remained for some hours, must and will be found, always and without exception, to have an acid reaction.

5. The extent to which any tooth suffers from the action of the acid depends upon its density and structure, but more particularly upon the perfection of the enamel and the protection of the neck of the tooth by healthy gums. What we might call the perfect tooth would resist indefinitely the same acid to which a tooth of opposite character would succumb in a few weeks.

6. An occasional possible absence of an acid reaction in a cavity of decay is no indication that acid has not participated in the production of the cavity. Little or no value can be attached to tests of the saliva alone.

7. Any general or special disorder or condition of the system which results in the withdrawal of lime salts from a tooth, or in a lowering of its density, or in a weakening of the chemical union between the organic and inorganic matter of the tooth, renders it more liable to decay.

8. Strong acid and corroding substances brought but momentarily into the human mouth, may give rise to lesions of the enamel at points where the ordinary agents alone could never have begun.

9. All the *macro*scopical appearances and characteristics of caries may be produced with the greatest exactness *out* of the mouth, simply by subjecting teeth to those acid mixtures which are constantly to be found *in* the mouth.

10. The superficial layers of carious dentine undergo an almost, if not absolutely complete decalcification, which decreases as we approach the normal dentine. The same is true of dentine decalcified in saliva and bread.

11. The destruction of the organic constituents follows (not precedes) the decalcification, and is evidently for the most part to be ascribed to the action of fungi.

12. The fungi found in the human mouth do not participate *directly* in the process of decalcification. The exact part which they perform in the production of an acid reaction requires farther investigation.

13. The fungi produce the most manifold anatomical changes in the softened dentine, resulting in the complete obliteration of the structure and final disappearance of the tissue in a mass of debris and fungi.

14. The invasion of the micro-organisms is always preceded by the extraction of the lime salts.

15. The destruction of the tissue remaining after decalcification, is effected almost wholly by fungi alone.

16. Inflammation can hardly be looked upon as a very important fact in caries of the teeth.

17. Caries of the enamel is purely chemical, the decalcification resulting at once in the complete dissolution of the tissue.

18. Caries of cement runs a course analogous to caries of dentine, a softening of the tissue by acids, and following this its destruction by fungi, a slight inflammatory action on the part of the living matter in the corpuscles is not to be excluded.

"GUTTA-PERCHA STOPPING," by Chas. E. Francis, D.D.S., New York.

The frequent enquiries about this material, and its mode of employment induced Dr. Francis to write this article. Gutta-percha possesses great adaptability, and as it expands slightly, is firmly gripped when placed in position. It is highly valuable in bucco-cervical cavities of second and third molars, and will wear for years. It is useful for packing against cervical walls of large buccal or approximal cavities, prior to filling with oxy-phosphate of zinc or amalgam, also for repairing large gold fillings, whose cervical borders are undermined. Its easy introduction recommends its use in filling deciduous teeth. It is useful for white caries. In early disease of permanent teeth it is very valuable. When the dental pulp is nearly or entirely exposed a cup of oxy-phosphate of zinc should be employed as a guard, since gutta-percha might, if applied directly, cause pulpitis by its expansion and consequent pressure. Similar precautions must be taken when the enamel walls are thin. For large stoppings gold caps or T-shaped anchors are useful to fix the gutta-percha. It is necessary to heat with caution; if overheated this material is spoilt, so warming in a dish or hot water bath is best. Pellets may be inserted with a small curved or flattened instrument, pressed home, all excess removed by heated instruments, and the surface burnished.

"CASE OF ULCERATION of the autrum," by Dr. W. P. Richards.

The patient, a lady, described her malady as—"no appetite, dull pains in head—offensive breath." Examination revealed necrosis of left upper central and lateral incisors as well as the canine. These teeth had been troublesome previously and had been treated—badly the writer thinks—by arsenic. Over the canine, was a small hole through which pus escaped.

A probe was passed backward along the palatine arch. A puffy red spot was seen far back in the vault of the palate. Subsequently this was incised and much fœtid pus escaped. A silver canula with a broad flange was inserted and a long draining tube attached—so that effective drainage was ensured.

DEUTSCHE MONATSSCHRIFT FÜR ZAHNHEILKUNDE

(December).

"DENTAL FISTULA following typhus," by Jul. Parreidt, Dentist, Leipsic.

This was a case of fistula in the cheek, the patient, a man aged 36. The fistula having been eradicated, he came for advice, about pain arising, as he thought, from a bad tooth. He had had the fistula for a year, previously he had had typhus, in consequence of which his teeth had become loosened. A large swelling in the upper jaw ensued, and matter exuded during some weeks, after which the opening closed. This had happened several times in the course of years. Examination revealed the teeth in the lower jaw apparently sound, no defect nor discoloration was detectable. The patient imagined the canine tooth to be the one affected, but this was not so. There have been cases of fistula arising from tranmatism; but it was not so in this case, in which it was probably due to chronically diseased bone. In consequence of typhus, gingivitis and stomatitis had arisen owing to the soft parts of the mouth not having been used. This had produced an abscess. Pus had since formed, and as it gradually decreased, the opening closed; but after the fistula was eradicated, the pus could not disperse, and as the bone was diseased, the cure could not be perfected. We attempted the absorption of the pus by means of an iodine application, to be renewed daily for a fortnight. The pulp vessels of the tooth were then found to be so compressed by inflammation, that the tooth was destroyed. If the pus did not cease to exude, it might be attributed to a tooth which should be extracted, and if the root should prove sound it might be replaced and the next tooth, the 2nd incisor, extracted. The 1st incisor has seldom, or never, been the cause of fistula.

The patient came again, the fistula having closed but eight days before, because it had again opened. As it was not cured it was clearly caused by a tooth. On examination with Grohnwald's Stomatoscope, after cleansing the teeth with pumice stone, the canine, which was firmly fixed, was extracted. The periosteum was thickened and red, and the root somewhat rough, shewing there had been a fistula. The patient would not allow replacement of the tooth. The pulp was a white, fibrous substance, such as softening caries produces, but was in this case produced by typhus stomatitis. The cure was complete. Fistula following typhus stomatitis is very rare indeed.

"Reparation of a Defect in the upper jaw, caused by a gunshot wound," by Dr. Anton Bleichsteiner, Graz, Steinwark. [The great interest of this paper induces us to give a very full summary.—Ed.]

In February, 1881, Josef Pirker was cleaning his double-barrelled gun, when it went off, and the ball entered his chin, struck the bone, shattered the lower jaw, did considerable damage to the upper jaw, upper lip, and nose, and penetrated to the nasal part of the frontal bone. During the process of healing several splintered fragments of bone came away. The shot had caused a disfigurement of the face, from the forehead to the nose and upper lip, the nose being destroyed almost beyond recognition. The nasal process of the upper jaw was destroyed, and the septum bone of the nose therefore lacking, the alveolar process in the vicinity of the incisors and the palate was shattered, and consequently there was a dislocation of the communicating parts of the upper jaw. The under lip remained intact. That part of the under jaw which bears the incisors was lacking. The remaining fragments were cuneiform in shape. The left canine tooth pressed on to the second right molar.

On the 2nd June, 1881, a plastic operation was performed without anæsthesia by Dr. Von Rzehaczek. On the 22nd July the patient was able to leave the hospital, and handed over to me for reparation of the defect of the upper jaw. As the whole of the intermaxillary bone, and even that part of the upper jaw which bears the molars were lacking, the profile of the face presented a sunken appearance between the eyes and the upper lip. The left canine tooth protruded over the under lip, and looked as if a white ball were held between the lips.

The plastic operation had so narrowed the cavity of the mouth that the patient could not close it firmly. Consequently I had to be very careful in taking an impression of the upper and lower jaw. The first impression taught me how to use the mouthpiece, in order to receive a sharp and clear impression, and at last I obtained a satisfactory one, after which I could proceed to work. It was not less difficult to get a good impression of the lower jaw which had assumed a cuneiform shape. In the upper jaw, the incisors, both eye teeth, the molars on both sides, and on the right side, the first molars were lacking. The right side of the upper jaw inclined towards the middle, and sloped more from the back to the front than to the left. Near the boundary line of the soft and hard palate was a hole which was in communication with the nares. I endeavoured to make the jaw's meet for the process of biting, I found that the teeth did not move, but the lower molars pressed on the gum on the inner side of the upper molars. This showed that the existing teeth could not be depended upon for mastication. I must find out how to bring something into contact with these lower teeth, as the palate of the upper jaw was useless. But how to find a foundation firm enough for repairs, as the place between the first molar on the left and the second on the right was one with the cavity of the nose. A gold plate was out of the question. If the lower jaw had been intact I could have obtained a hold of the upper jaw by means of a *spiral spring*. I tilted the molars and let the basis plate go over them as far as tuberosity of the maxilla.

The intermaxillary bone received a process, which was intended to raise the sunken nose. I placed now the four incisors, the two eye teeth and a molar; more than the leading teeth could not be placed because of preventing mastication. On the left were cavities for the three left molars, on the right for the two right molars. The plate reached to the edge of the cavity, and here it is bridged over the loss of substance; this however, did not answer, as the patient could scarcely breathe when his mouth was closed, but when, afterwards, the plate left this cavity free he was able to do so. The teeth had to incline towards the compressed part of the lower jaw, the middle incisors were tolerably long so that they might hide the ugly left canine tooth. The plate must be used in the place of the teeth in the upper jaw for biting. The difference in the appearance of the patient after the restoration was striking, the sunken upper lip and the ugly protruding canine tooth having disappeared. The nose was more prominent, the limp hanging cheek was fuller, and the face assumed a more even surface. Improvement was particularly noticeable on the left side as there the sinking in of nose and lip had been worse than on the right. The middle incisors protruding over the edge of the lip had the lion's share in beautifying the face. The adhesion of the new plates was perfect and neither speaking nor chewing disturbed it. The patient quickly got accustomed to it, and besides the improvement in his appearance it gave him ease both in eating and speaking.

"THE ANÆSTHESIA QUESTION and the law," by L. Schmidt, in Lubeck.

Is there a law obliging doctors and dentists about to anæsthetise to call in as assistants a medical and a non-medical man? In the German statute book there is no such law, but if we put the question in this form: Is there a law which makes a man culpable who has conducted a case without assistance, in which his patient has been killed or injured? This must be answered in the affirmative, for 222 of Statute Book says: "I. Whoever causes the death of a man through negligence, will be imprisoned three years. II. If the negligent person was particularly bound to be careful in virtue of his office, the punishment will be increased to five years. But if a man conducted anæsthesia without assistance in a case of necessity, such as the patient not being expected to live, until assistance could be procured; if in this case death ensued, it would be unjust to accuse the doctor of negligence, and, indeed, had he wished for the required help, he would have laid himself more open to reproach for neglect." It is strongly to be recommended that a doctor as well as the operator should be present, for he, being entirely taken up with the operation or preparations for it, is unable to watch the state of the heart, lungs, or pulse of the patient, and a third person is also desirable to countenance the doctor and make any ungrounded complaints against the doctor which may arise from the fancies of the person operated upon impossible.

Dental News.

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

(*Concluded from p.* 43.)

It would be well to take a few typical specimens for closer examination, and from the lower class we would take the common whelk, and having divested it of its shell, it must be pinned out on a weighted piece of cork below water. One of the first objects which strikes the eye is, if it is protruded, a long muscular, flexible tube of about an inch or an inch-and-a-half in length, with an opening at its free end, which constitutes the mouth. When the animal is not feeding, the whole of this tube is withdrawn into the shell, through the action of the extrinsic muscles, which reverse the lower half of the tube, and thus draw anterior half completely within it, telescope fashion.

On laying open the interior of this tube, it will be seen to contain the gullet, the odontophore and its muscles, and the duct of the salivary glands, while at its base are seen the salivary glands themselves, two fair-sized yellowish bodies; from these the ducts may be traced passing down side by side with the æsophagus through the ring of nervous ganglia to the mouth, which they enter and open in close proximity to the teeth. The ducts, which I have dissected out from an average-sized specimen, measure some 3½in.; when in situ, however, they are more or less wavy in their course, to accommodate themselves to the movements of the animal, and do not therefore appear so long. The teeth need not be described, as they can be seen under the microscope. This genus demonstrates very clearly how effectual are the powers of the odontophore; settling usually upon some bivalve shell, such as the common mussel, they drill a small hole through the shell close to the hinge, evenly and neatly, as though it were done with a burring engine. I have often in my shore rambles found the shell thus drilled, and on one occasion remember seeing it in course of operation. It is by no means a newly-acquired habit, as many specimens found among fossil beds of shells bear complete evidence as to the antiquity of this cannibalistic propensity.

Passing away from this group to the nudibranchs—those popularly known as sea lemons and sea slugs, we come to a series of creatures, many of whom, unlike there terrestial representatives, are tinted with most exquisite colours and beautiful in every respect. Very many of them are armed with horny mandibles to aid in prehension, and in one of the eolidæ they seem to resemble a pair of nut-crackers with double dentated edges, the handles being embedded in muscular tissue. Some species are not, however, contented with this, but have, in addition to the odontophore, a prehensile collar armed with teeth, while others, still less easily satisfied have the stomach armed with gastric teeth.

From the next class, the slugs and snails common to our gardens may be taken as typical examples. The odontophore is shorter and broader, and the teeth blunter than in most of the marine molluscs; at the same time they are more numerous. The great slug has been calculated to have 160 rows of teeth, with 180 in each row, making a moderate total of 28,000, but a comparatively small proportion of these are in use at one time. If a snail be dissected from the ventral surface, as soon as the muscular skin is removed the alimentary canal will be laid bare. At its commencement is seen the mouth, with its small horny mandible, and leading away from it the æsophagus, which, passing down through the ring of nerve ganglia, gradually widens into a kind of crop, closely embraced by the salivary glands, from which, as described in the whelk, the ducts may be traced to the mouth. I have examined the glands of one or two species microscopically; they seem to be of very simple construction, and to consist of largish round cells with single dark looking nuclei, the individual cells being loosely bound together with connective tissue. The clusters of cells constituting the lobes of the gland are also loosely joined, and are easily pressed apart between the cover glass and slide. These cells may be seen lining the ducts, forming, indeed its walls, but the branches of the duct are not so readily visible. They take the carmine stain fairly well, after the mucous has been removed by immersion in spirit, and may be mounted in glycerine.

The next class, the pteropoda, I will pass over, never having had any opportunity of examining them. They have, according to Woodward, a very simple dental formula, but possess, in addition, a muscular gizzard, armed with gastric teeth.

In the highest class, the cephalopoda, the dental apparatus which we have been considering as a microscopic structure is distinctly appreciable, and in very large specimens even formidable. They are all armed with a horny mandible, partly calcareous in the nautili, strongly resembling a parrot's beak in shape; the one exhibited with about a half-inch gape was taken from an ordinary sized specimen with arms, measuring about six or eight inches, and when we remember that the existence of individuals having arms at least seven feet in length has been perfectly authenticated, we can form an estimate as to what the size and character of their jaws would be. The structure of the odontophore is essentially the same as in the other mollusca, and the teeth are larger and stronger, though as a rule not sufficiently large to be clearly seen without the aid of a magnifying glass. Those upon the rachis very strongly resemble those of some of the shark in shape.

The molluscan teeth appear to be perfectly homogeneous in structure; that is, there is no variety of tissues as in those of the vertebrata, but when examined at a very early stage of their devolopment a number of very fine rods may be traced out, about the size and general appearance of enamel prisms, though there is no other resemblance, these teeth being entirely composed of chitinous material. These chitinous rods or striæ run in lines transverse to the long axis of the tooth, from one side to the other, and probably encircling it, and suggest that the cusp of the tooth is formed first, but judging from general appearances, this does not seem likely.

If a limpet be dissected it will be seen that the radula is of a remarkable length, exceeding that of the greater diameter of the shell. It lies doubled upon itself in the cavity of the body, the part in use, however, probably not exceeding more than $\frac{1}{8}$ or $\frac{1}{6}$ of an inch in length, while an inch, or the greater part of the remainder, is within the developing sac. This latter part is protected from the cavity of the body by a reflection of the mucous membrane, from the mouth and the odontophoral cartilages, while inside this again is another membrane which envelopes the radula closely, except at the end, where it enlarges in a bilobed sac. I am not certain as to distinctness of these two membranes, though they appear to be independent. The bilobed sac is, however, unmistakable, and if placed upon a slide and the cover glass gently pressed upon it, it bursts, and a watery-looking fluid escapes, containing dark granular looking material suspended in it. The bursting of the sac leaves the developing teeth exposed lying upon the radula, from which they are developed, and where they are seen as delicate, flattened, colourless cells, some of them showing in outline the nature of the teeth they are to become. A few rows further down they are completely formed so far as shape is concerned, but still soft and colourless, and exhibiting clearly the rods or striæ above referred to. If the whole radula, after being freed from the membrane, is passed through the field of the microscope, the teeth will be seen to gradually assume a brownish orange tint, which becomes darker and darker as the teeth become harder and more perfect, till, towards the buccal extremity, the cusps are seen perfectly black. Near the mouth the teeth pass from beneath the membrane composing the developing sac, and enter the cavity of the mouth, or rather lie upon the odontophoral cartilages, covered only by the buccal mucous membrane in the same way that the teeth of sharks and rays are erupted in successive rows from beneath the folds of mucous membrane at the base of the jaw, where they are developed.

The only literature that I can find bearing upon this part of the subject is a paper read by Professor Huxley before the Royal Society of London, where he treats of the anatomy of the doris,* one of the "sea lemons," popularly so called. In them the radula is much shorter than in the limpet, and tongue shaped, and the developing sac in which the posterior part is lodged, resembles a tube somewhat flattened laterally. Professor Huxley says :—"If we make a tranverse section of the part of the tube which projects from behind the buccal mass and examine it, we find in the centre a fleshy, wedge-shaped lamina, bounded on both sides by two parallel membranes, between which are developed the teeth. If another section be made lower down, the lamina, before attached to the tube merely at the apex of the wedge, is now continuous with the muscular lining of the sac along the median line. Along each side of this attachment is found an enlargement of the mucous membrane, which would seem to be of a glandular nature, and most probably from this the parallel membranes before mentioned originate. Upon the outer of these membranes, which has received the name of the dentigerous layer, the teeth may be discovered at a very early period in their growth as rows of elongated, and attenuated, soft, and colourless cells. Two or three rows further on they may be observed to have attained the size and form of the mature teeth, still, however, remaining soft and cell-like; the next rows are harder, and are slightly tinted with an orange colour, while still further on, at the mouth of the sac, they have attained all the characteristics of perfect teeth, and are hard and highly polished. The space between the two parallel membranes is packed with a soft matter derived from the inner layer, and which, when placed in spirit, becomes flocculent; in this matter the teeth are embedded."

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* "Anatomy of Doris." Phil. Tran., 1852.

I have only been able to procure one specimen of the doris (D. tuberculata), but most of the appearances which Professor Huxley describes are easily determined, except the flocculent packing matter, but as the subject had been in spirit for a long time, it is perhaps no less than might have been expected. There was, however, the same granular deposit upon the walls of the tube which was referred to as being present in the fluid contents of the developing sac of the limpet. The membranes will also correspond, the outer one upon which the teeth are developed forming the radula, while the inner one serves to enclose the fluid in which the developing teeth are embedded.

There appears, however, to be nothing in the limpet to correspond to the "fleshy wedge-shaped lamina," nor to the "enlargement of the mucous membrane of a glandular nature at its base," neither do they seem to be present in the snail, where the developing sac and odontophore is somewhat similar externally to that of the doris. I have not, however, examined any other of the nudibranch molluscs with a view of determining this, but probably the exact method of development is confined to this group, the presence of the parallel membranes being apparently the necessary element for their production. Professor Huxley compares them to the pulp and enamel membranes of the vertebrates; if the pulp and enamel membranes represent the odontoblast layer and the internal epithelium of the enamel organ, the analogy is scarcely borne out, but this paper referred to was written some years ago, before the development of the teeth was as well understood as it is now, and without attempting to draw any close comparison between classes of animals so distinctly removed from one another, I think that no one would doubt the relationship of these molluscan teeth to those of the sharks and rays in the fishes. Shape, of course, cannot be taken into consideration, but the method of development of the teeth in this sac, lined with a continuation of the mucous membrane of the mouth, the contained membranes with their row of denticles, the advance from beneath this membrane into the cavity of the mouth, or, as we should say, their eruption, all present analogies which cannot, I think, in justice be overlooked.

The PRESIDENT, in thanking Mr. Amoore for his very interesting paper, remarked that it belonged to a class which, while involving considerable labour in preparing and illustrating, unfortunately left no room for discussion. He had been much struck by the close approach shewn in the development of the teeth on the radula to that seen in sharks, &c.

The CHAIRMAN then announced that their next meeting would be on the second Thursday of January, when Dr. Kingsley's paper—" Judicious and Injudicious Extraction " (see " Cosmos" for November),—would be discussed.

APPOINTMENTS.

Mr. F. ST. B. TAYLOR, L.D.S.I., has been appointed Dental Surgeon to Monkstown Hospital, Monkstown Co., Dublin.

Mr. THEODORE STACK has been appointed Professor of Dental Surgery at the Royal College of Surgeons of Ireland.

OBITUARY.

WE regret to announce the death of Mr. W. K. Bridgman, which took place on the 27th of last month.

Mr. Bridgman was born in 1812. He pursued the profession for many years, but retired into private life some time before his death. It is a melancholy circumstance that Mr. Bridgman survived his wife by only nine months.

Notices of Societies.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY GENERAL MEETING, HELD NOV. 10TH, 1883,
STORER BENNETT, Esq., F.R.C.S., President, in the Chair.

THE minutes of the previous meeting were read and confirmed.

The PRESIDENT announced that Mr. J. O. Butcher had been obliged to resign office as Secretary of the Society, in consequence of his having accepted an engagement in Birmingham.

A cordial vote of thanks was proposed, and carried with acclamation, for the able and efficient manner in which Mr. Butcher had fulfilled his duties towards the Society. Mr. Stainer kindly consented to assist Mr. Newland Pedley, temporarily.

Mr. L. E. Senton was proposed by Mr. Hern, and seconded by Mr. Latchmore, as a member of the Society.

CASUAL CONMUNICATIONS.

Mr. NEWLAND PEDLEY brought forward three cases of fractured inferior maxilla, which had come under his treatment during the past month. One case was that of a child of five, who submitted to the application for a Hammond's wire splint without obvious signs of disapprobation. A second case occurred in an adult. The fracture was double; with great displacement, and had been neglected for a fortnight. An attempt was made, under profound anæsthesia, to place the fragments into correct position, but this proved futile on account of the obliquity of the fracture, and the presence of provisional callus. Mr. Newland Pedley suggested that in cases where personal appearance were of great moment, resection of the ends of the fragments should be made in order to secure a correct articulation.

MR. W. A. TURNER, through Mr. Crocker, presented to the museum of the society, the skull of a large ruminant.

MR. G. M. SKIPP showed a tooth, the fang of which was affected with "needle point" absorption.

MR. LERASON showed a marked case of salivary calculus.

The PRESIDENT then called upon Mr. Levason for his paper on "Our Future when Qualified."*

The paper elicited the liveliest interest; as it touched upon the relations of Dental surgeons to the rest of the medical profession; and opened, for discussion, the desirability of Dental students seeking other diplomas in addition to the L.D.S. The great weight of opinion expressed was in favour of the fact that the possession of the L.D.S. diploma and manipulative skill was of paramount importance, and that the possible acquisition of other degrees was of very secondary consideration.

The following are the names of the gentlemen who took part in the discussion:—The President, Messrs. F. Newland Pedley; C. Robbins; E. Latchmore; C. D. Davis; W. Hern; Read; S. Mundell; W. B. Paterson.

At the conclusion of the discussion Mr. LERASON made a short reply, and a most cordial vote of thanks was accorded him for his most successful paper.

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* We print the communication *in extenso* in page 52.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From Dec. 1st to Dec. 31st, 1883.

Extractions	Children under 14	331
	Adults	706
	Under Nitrous Oxide	253
Gold Stoppings		149
White Foil ditto		12
Plastic ditto		676
Irregularities of the Teeth treated mechanically		149
Miscellaneous Cases		121
Advice Cases		101
	Total	2498

Harry L. Pillin *House Surgeon.*

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL,

From Dec. 1st to Dec. 31th, 1883.

Number of Patients attended		1286
Extractions	Children under 14	337
"	Adults	716
"	Under Nitrous Oxide	231
Gold Stoppings		72
Other Stoppings		275
Advice and Scaling		160
Irregularities of the Teeth		78
Miscellaneous		103
	Total	1972

Chas. W. Glassington, *House Surgeon.*

QUARTERLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF EXETER, BEDFORD CIRCUS.

From Oct. 1st to Dec. 31st, 1883.

Extractions	Chlldren under 14	310
	Adults	661
	Under Nitrous Oxide and Ether	73
Stoppings	With Gold	19
	With White Foil	
	With Plastic Material	180
Miscellaneous—Irregularities of the Teeth, Scaling, &c.		115
	Total	1366

Henry B. Mason, *Hon. Sec.*

BOOKS AND PAPERS RECEIVED.

"Le Progrès Dentaire," "Glasgow Medical Journal," "Dental Headlight," "Woods and Forests," "Pharmaceutical Journal," "Lancet," "British Medical Journal," "Banner of Hope," "Dental Record," "Zahntechnische Reform," "L'Art Dentaire," "Deutsche Monatsschrift f. Zahnheilkunde," "Independent Practitioner," "A Few Words on Anæsthetics," "Medical Annual" (Kimpton), "The Teeth—Their Formation, Diseases, and Treatment."

Erratum.—"Manipulative Miscellany."—Mr. Rutterford's Rubber Stamp should be Mr. Wright's Rubber Stamp.

British Journal of Dental Science.

No. 385. LONDON, FEBRUARY 1, 1884. Vol. XXVII.

AMAUROSIS OF ONE EYE CONSECUTIVE UPON RETAINED TEETH.

By Percy May, M.R.C.S.Eng., L.D.S.Edin.

In the address delivered before the Odontological Society of Great Britain, Mr. Henry Power has drawn attention to the close connexion which exists between injuries and diseases of the teeth, and sympathetic lesions of the eye. He has shown that many of the morbid conditions met with by the ophthalmic surgeon, really originate from dental abnormality, or disease, and so belong to the practice of the dental surgeon; many of these cases occur on the borderland of ophthalmic and dental surgery, and so are liable to be overlooked by specialists of either branch of the profession. The case which is the subject of this paper affords an example of these cases, and is of value, as few practical hints upon these important occurrences, are to be found in the text books in common use. This patient came to me for rectification of a dental defect, other than the one which eventually revealed itself to be the cause of her amaurosis, and it was only in the course of conversation, that I learnt that the sight of her left eye was practically lost.

The patient, a young lady of 17, informed me that sometime back complaining of weakness of sight, she consulted an ophthalmic surgeon, who, after examination told her that she had almost complete loss of vision of the left eye, and that the other eye was becoming affected from over use, the left eye had been in that condition "about two or three years."

Upon writing to the gentleman who attended her, I was informed that there was "some choroidal change at the posterior part of the eye," but he was "at a loss to account for its cause, and that the removal of the retained tooth could only be of service."

When I first saw her I found it necessary to insert a few artificial teeth, and upon taking an impression of the mouth I noticed a slight enlargement in the bicuspid region of the hard palate, upon puncturing which I distinctly felt the enamel of a tooth immediately beneath the mucous membrane. I advised her, therefore, to allow me to remove the retained tooth in the hope of benefiting her eyesight, and, upon testing her vision with a watch, I found she could not distinguish the white of the face from the gold of the back, held about a yard off, nor yet make out a person's features at the same distance, the right eye being kept closed with the finger.

While she was under the influence of the anæsthetic, I made a crucial incision down to the tooth, and with the greatest difficulty succeeded in removing a considerable portion of what appeared to be a bicuspid, but being removed in fragments it was impossible to be certain as to its individuality. Upon regaining consciousness the patient immediately exclaimed, "Oh, I can see with the bad eye," and upon testing with the watch she could distinguish the face from the back three yards off.

Two days after, in reply to my letter, she informed me that her left eye had so far improved that she could read with it and without the assistance of the other. I saw her again a week after our first interview, and there being no further improvement I advised her to pay another visit to her ophthalmic surgeon.

From knowledge of other members of her family I could discover no symptoms of constitutional taint. There has been throughout a remarkable absence of all symptoms of pain or uneasiness, except the amaurosis.

The case also illustrates the extreme importance of early diagnosing lesions of the teeth directly or indirectly affecting the eyesight, and recognizing the necessity of prompt treatment. The mouth is also interesting inasmuch as there is the absence of left canine and bicuspids and the presence of a supernumerary tooth on the same side.

The "Dental Luminary" for November contains an article by Dr. Perine, which offers a rapid summary of Dental Literature during the past half century—he will be a brave man who undertakes to *prècis* the literature of the next fifty years!

French journalists are sorely puzzled by the names *perfide Albion* indulges in. The "Revue Odontologique" indulges its readers with an account of Mr. Hepburn's paper on tobacco, and incidentally allude to M. Darkley Coles and M. Arthur Unterwood. It seems a pity so well-informed a journal should be led into parodying names.

ON THE SEAT AND TREATMENT OF RANULA.

By Dr. E. Sounenburg,

DOCENT AND FIRST ASSISTANT AT THE ROYAL CLINIC OF BERLIN.

Two years ago, in a paper published in Virchow's Archives (vol. 84, p. 425), Von Recklinghausen first expressed the opinion that true ranula commences in Blandin Nuhn's glands, two small salivary glands, which are found in the substance of the tip of the tongue. This opinion he rested on the anatomico pathological examination of one case.

The seat of these glands is often very irregular; they sometimes form important bodies very easily defined, but occasionally the glandular masses are widely separated or altogether wanting. As as rule, two glands are present in the tip of the tongue; in some instances, one lies a good deal further forward than the other; in others, one is well developed, while the other is altogether absent. As a rule, the principal portion of the gland on either side is on a level with the surrounding portion of the mucous membrane from which the frœnum arises.

Von Recklinghausen thus explains the formation of these cysts; the retained saliva causes a bulging of the wall of the duct, the surrounding tissue gives way to the pressure, and becomes agglomerated with the walls, the epithelial cells increase *pari passu* with the enlargement of the upper surface so that the upper wall always remains entire.

The primary cause of this cystic dilatation is to be found, says Von Recklinghausen, just as in Bartholin's duct in a myxangoitis, which causes a seclusion or a partial obliteration of the gland duct. The salivary cyst increases in size in the direction of the floor of the mouth, and appears, as a rule, to the side of the frœnum linguæ. In the case published by Von Recklinghausen, the tumour had developed in the left Blandin Nuhn's gland. The cyst presented the appearance of an enormous dilatation of one of the chief ducts of the gland, which must have had its starting point in the centre of the gland. Von Recklinghausen regarded his case as an example of the ordinary kind of ranula the "true" form of Jobert or the "classical" of Broca.

The signs he looked upon as proofs of this were:—1. The salivary contents of the ranula; 2. Its shape and growth from the depth of the substance of the tongue towards its under surface; 3. The permeability of Wharton and Bartholin's duct not only at its orifice, but also in the whole of its course; 4. The anatomical seat to one side of the frœnum; 5. The special wall of the ranula, which may be separated from the surrounding tissue, and the fact of the cyst being covered with epithelium; 6. The remains of gland tissue on some portion of the cyst, especially in cases of so-called multilocular ranula.

All these points militate strongly against the old opinions. These were, excluding the belief of the ancients that ranula is a form of abscess or cystic tumour—1. That ranula is due to on ectasia, or dilatation of the ducts of the submaxillary and sublingual glands. This opinion has been defended up to the present day; 2. It was thought that ranula had some connection with the mucous sac, described by Fleischmann as existing in the middle line on either side of the frœnum, an appearance which is not often met with. This circumstance cannot disprove the occasional connection of the mucous pouch with the ranula.

For the last two years, I have carefully examined all the cases of ranula I have had occasion to operate, and I have come to the conclusion that in the large majority of instances they had had their starting point in Blandin Nuhn's gland in the tip of the tongue. The cases which formed the subject of this enquiry were of very different natures, and my attention was next drawn to this important condition by a case operated on two years before, and which confirmed in the most wonderful way Von Recklinghausen's view.

The case was that of a girl aged six, Bertha Grundlach, who was admitted to the Royal Clinic in March, 1881. On admission the patient presented quite a remarkable appearance. The mouth was widely spread, and could not be closed; the floor was filled by a large blueish swelling, very tense to the feel, and with well-marked fluctuation. The tongue was forced upwards, so that only a very small space remained between it and the hard palate, hardly sufficient in fact for the passage of food. The power of speech was almost lost. The tumour was limited in front by the inferior and anterior portion of the tongue, and was divided by the frœnum linguæ into two portions nowhere very distinctly separated; the left being somewhat larger than the right. On either side of the tumour Wharton's ducts were distinctly visible, both allowed the passage of a sound. The sublingual region was also bulged out by the tumour, the swelling reaching backwards nearly to the upper border of the thyroid cartilage. No definite account of the effects or of the mode of origin of the tumour could be obtained from the parents; except that it had lately much increased in size. The operation consisted in making a transverse incision 6 centms. long in the region of the lower jaw, then dividing the skin and subcutaneous cellular tissue on to the cyst; the tumour was next separated as far as possible from the loose connective tissue, and it could now be almost entirely enucleated from the region of the lower jaw. As owing to its size, the mass could not be sufficiently drawn out to allow of its removal, a portion of the muco-purulent contents was allowed to run out, the cyst being forcibly dragged forward to complete the extirpation. On introducing the finger into the cavity of the tumour to make out exactly its limits, the important fact was now ascertained that the tumour had altogether encroached on the substance of the tongue itself, in fact there appeared to be nothing more of the substance of the tongue left; its upper surface found the superior wall of the cyst, so that on drawing the remains of the tumour towards the chin, the remains of the tongue immediately followed. By careful manipulations we were at last enabled to entirely enucleate and remove the whole of the cyst. The left hypoglossal nerve was found to be in immediate contact with the capsule.

(To be continued.)

ON THE RELATIONS BETWEEN DENTAL LESIONS AND DISEASES OF THE EYE.

By HENRY POWER, M.B.Lond., F.R.C.S.,

OPHTHALMIC SURGEON AT ST. BARTHOLOMEW'S HOSPITAL, AND SURGEON TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, ETC.

(*Continued from p.* 69.)

A similar case, in which an amaurotic condition of the eyes was improved by the removal of the stopping from a carious tooth, and was subsequently entirely cured by the removal of the tooth, has been reported by Dr. M. F. de Witt.* A strong and healthy man, aged thirty-one, discovered that his right eye was blind. No pain, no photopsiæ had been experienced. He could distinguish light from darkness with the affected eye, but that was all. He was unable to give any account of the cause of the attack, but after a while he remembered that two months before losing his vision several teeth had been stopped. He had often felt pain near the first molar tooth of the right side, and he had often also experienced pain and tenderness of the gums, and abscesses had formed which he had himself opened with a penknife. On examination the tooth was found to be reduced to a shell, with a fistulous opening leading to the alveolus. Dr. de Witt, suspecting irritation of the fifth nerve proceeding from the teeth, removed the stopping in order to obtain a counter-opening, and to permit the fistulous orifice to close and to arrest the irritation. The immediate effect was that the gum ceased to be sore, and the visual power began to improve. After three weeks, when the sharpness of vision had greatly improved, the gums began to be sore, and coincidently the acuteness of vision diminished. The affected tooth was extracted, and improvement then again took place, and vision became restored almost to its normal amount, though still not equal to that of the other. The fang of the tooth was filled with pus.

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* "Amer. Journ. Med. Sci., N. S.," CX., p. 382, April, 1868.

M. Nicaise* remarks that he knew that in certain cases the irritation of a dental nerve may induce troubles, which indeed are often only transitory, of vision. These disturbances are explicable on the ground of the intimate relations which exist between the different branches of the fifth pair of nerves, the function of which is sensory, and which govern also the nutrition of the regions to which they are distributed. If the irritation of the fifth nerve is persistent, and if it ends by affecting some alteration in the nerves, it is possible that the disturbances of vision may become more serious and even permanent. Glaucoma, which is especially due to troubles of nutrition, may possibly have its point of departure in a lesion affecting the superior or inferior dental nerves.

The relations of the teeth to glaucoma have been considered by several writers, but especially by Hermann Schmidt† and by Priestley Smith, whose remarks upon the subject are very sensible.‡

Glaucoma is a condition of the eye in which the humours of the eye are secreted in larger quantity than they can be taken up by the absorbents; the tension of the eye is therefore increased, it becomes hard and exquisitely tender, then extremely painful; the vessels of the retina are often seen to pulsate, and finally, after a period of suffering of variable duration, it quiets down, but the disk remains cupped, and vision is either altogether lost, or permanently and seriously impaired. I may say, in passing, that the cases of blindness which come before the ophthalmic surgeon from this cause are amongst the most melancholy that he sees—melancholy because he feels that in the majority of cases, if the surgeon in attendance, instead of being misled by the specious term "neuralgia," had recognised the disease and insisted on the performance of iridectomy during the first two or three days of pain, sight would have been perfectly preserved.

In regard to the pathology of this disease it is enough to state here that the increased hardness or tension of the eye is due in part to hyper-secretion, and in part to imperfect drainage of the aqueous fluid. How are these conditions produced? The imperfect drainage we know is produced by a narrowing of the depth of the anterior chamber, which interferes with the entrance of the aqueous humour into the canal of Schlemm and its passage outwards, and this is the result of the approximation of the iris to the cornea, either by enlargement of the lens, as Priestley Smith thinks, or by the formation of adhesions between the iris and cornea, as others believe.

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* "Gaz. Méd. de Paris," 1871, p. 150.

† "Archiv. f. Ophthal.," XIV., i., 107.

‡ "Glaucoma: its Causes," &c., 1879, p. 10, *et seq.*

But is there any evidence of hyper-secretion, and if there be, is the fifth nerve the exciting or even a predisposing cause?

It is certain that pain in the region of one or other of the branches of the fifth is a precursor of glaucoma in a large number of cases; and the presence or absence of ciliary neuralgia is mentioned in the report of almost every glaucomatous case.

But the most convincing evidence of the point in question is that which is derived from the experiments of Von Hippel and Grünhagen.* These observers found that whilst the normal tension of the contents of the eyeball is about 1 inch of mercury, if the aorta were compressed the tension rose to about 3 inches of mercury, and if now the fifth nerve was stimulated the pressure rose to as much as 8 inches of mercury, and at the same time well-marked pulsations were observed. Even when the stimulation of the fifth was discontinued the tension was permanently increased, and the augmentation was perceptible even after death. It is not clear whether the trigeminus here acts as a true secreto-motory nerve in the same sense that stimulation of the chorda tympani causes increased activity of the salivary secretion, or whether it acts simply by causing dilatation of the blood vessels, and thus leading to an increased supply to the organ.

The determination of this point, however, matters little from our present point of view. It is sufficient that irritation of the fifth causes marked increase in the tension of the eye, and it is easy to understand that in all case where from physical changes consequent on gouty or rheumatic inflammation of the iris, the eye is ripe for an outburst of glaucoma, the spark may be supplied by the irritation of a carious tooth.

(*To be continued.*)

DELAYED DENTITION.—A youth, fourteen years old, came to have his mouth examined. There were still remaining eight of his temporary teeth in good state of preservation, and still firmly rooted.

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* "Archiv. f. Ophthal.," XIV., iii., pp. 219-258.

British Journal of Dental Science.

LONDON, FEBRUARY 1, 1884.

PROPOSED DENTAL SOCIETY FOR BIRMINGHAM.

In another part of our pages will be found the account of a meeting held in Birmingham to try and decide if a Dental Society for the Midland Counties should be formed, with Birmingham for its headquarters. It was intended that it should be conducted on the principles of the Odontological Society, for the advancement of dental science and the social intercourse of its members; that its meetings should be monthly for a like session; and that it should be entirely non-political.

It will be seen that the upshot of the meeting was an apparent failure, there being twelve votes against the proposal and eleven in its favour; although one of these votes was challenged by Mr. Watson—who had called the meeting by a circular of invitation to practitioners—on the ground that the gentleman giving it was "an assistant to a practitioner invited." Be this vote valid or invalid there can be no doubt that the *actual* result of the meeting will be the formation of the society. The very fact that the invitation was so largely responded to at an inconvenient hour of the day for busy men, many of whom came considerable distances, and the interest displayed at the demonstration given by Mr. Verrier on Continuous Gum Facings: models and appliances for regulating teeth exhibited by Mr. Crapper, &c., shows that such a society is necessary in the district, and will be supported when formed. Nor may it be supposed that the vote given was even the real sentiment of the majority, for so much vigorous interest and enthusisam embued some speakers that many gentlemen were forced to leave, to catch trains, without being able to record their votes at all. Mr. Watson, in response to his application, had received the names of thirty gentlemen in favour of the Society, and only ten adverse. Some thirty-five gentlemen attended, and yet—including the disputed vote—only twenty-three opinions were recorded.

What really was done was to record the names of those gentlemen in the district who are unwilling, from one cause or another to assist in inaugurating the society, leaving, of course, the ground clear for the remaining gentlemen and their friends to set it afoot without further delay.

That such local societies, in great centres, must prove beneficial in the long run there can be no doubt whatever; indeed they must be considered the natural consequence of the advancement of the status of Dentists, if not directly from the recent action of the Odontological Society itself, in closing its doors to all except the licensed few. There are still a great number of most worthy practitioners of the pre-Dentists' Act period, throughout the country, who, although they are no longer eligible as members of the Odontological Society, have the well-being of their profession equally at heart, and are equally capable of advancing it. These, it is true, are eligible as members of the British Dental Association; but that institution—valuable as it has shown itself, and useful as it is destined to become—in nowise meets the requirements of any one centre. It is the periodical and frequent intercourse of the various members of any one profession that forms and cements friendships, and admits the most advantageous exchange of thought and experience. Even if a numerically small society cannot always produce a fresh formal paper to read, it can always re-discuss, in an informal manner, the valuable papers read at other meetings. It is notorious that most of the papers read at the Association meetings are, for want of time, either discussed very little or not at all, although, admirable as a paper may be, it is often in the ideas of fresh minds and the replies and explanations they produce from the original writer, that the chief value centres.

We cannot congratulate the proposed society on the felicity of its suggested title. "The Dental Society," is so indefinitely definite, that we trust some more appropriate and distinctive appellation may be found. It is no doubt the forerunner of other local Societies, and the more descriptive the name of each may be, the less confusion will there be when a few more years have passed away.

It was stated that there was no intention to in any way oppose the Dental Association, or interfere with its jurisdiction. In the Society's official capacity this would, no doubt, be correct, but unofficially and in fact such a thing would be impossible; for wherever men meet they are sure to converse on the political topics of their calling, and as many—perhaps all—the members would also be members of the British Dental Association, they would be constantly conning the doings and propositions of that assembly, and when annual or branch meetings of the Association took place, would attend with preconceived and prearranged plans for voting on its measures, instead of as at present, attending in their individual capacity without any previous opportunity of knowing each other's views, even though equally interested in the same local subjects. In this sense such a Society would certainly interfere with the Association, and possibly the Odontological Society too, as gentlemen who rarely attend its meetings might ultimately discontinue membership and join the local society. But in the end good would result, for the more local societies there are, the more the views of the whole profession would become known, and with it expanded liberality of opinion in the Association itself with a greater knowledge of, and more moral and actual control over the doings of Dentists as a body throughout the kingdom. London, Edinburgh and Glasgow have their societies—Leeds and one other town have them in a "homely" fashion, and why Birmingham, and all centres large enough for the purpose, should not follow suit, we are quite at a loss to suggest. We believe in time they will, and heartily wish each one speedy success.

DENTAL LITERATURE ABROAD AND OUR JOURNAL.

Of no profession can it be said more truly than of ours, that we live in an age of progress. Let any one look back through the past quarter of a century, when the "*British Journal of Dental Science*" was practically the only journal which represented the dental profession, and let him ask himself, how can I recognise the dental surgeon of to-day, equipped as he is with endless appliances and elaborate *armentarium,* as the lineal descendant of a past generation? It may be said, without shadow of question, that the advantages we enjoy now-a-days are boundless and need only the energy to make use of them. In the department of literature, perhaps the greatest changes have occurred, the most marked progress has been achieved.

In America every month seems to give birth to some fresh departure in Journalism or some new serial appears, while the volumes which cause the booksellers' counters to groan attest to the constant unflagging energies of our transatlantic brethren.

Nor is America singular in this; France and Germany each send their quota of dental journals, and Italy, although she boasts of fewer, yet supplies periodicals of unquestionable merit. To be a dentist is not simply to *have been taught* in a short school curriculum, but now-a-days, the dentist begins his education when he commences practice, and only he can hope for first class work and a reputation who can show that he has kept himself abreast of the times and is aware of what is going on in the world around him.

One often hears the so-called practical man—usually the antithesis of practical—exclaim he has no time or inclination for journal reading. Nor can we blame him, for no busy man could read a tithe of the original matter as it appears in the journals.

The system elaborated in Germany of abstracting all articles appearing in various languages, and presenting them in a concise and readable form, has now been adopted by us and has already proved a vast boon to many for whom the want of time or want of familiarity with foreign languages, has heretofore set a barrier between them and the perusal of the foreign journals. We are so fully convinced of the great practical import of these abstracts to the profession at large that we do not hesitate to say that to all Dentists we have now given an opportunity of the first importance, and one which should do much to enable English Dentists to maintain the high position they have always done, a position for which there is now such a keen contest on the Continent and in America. France has just started a vast scheme for educating her Dental Students and offers them chances of observing English and American methods and Germany is adopting a similar course, so that as time goes on, the bearer of the blue ribbon of Dental Surgery will need all his armour and weapons of fence.

It is then to help our readers to be among the first, and to have in their hands all the newest views and methods, that we have determined to persevere in the lines we planned in the past year, but were delayed in carrying into effect until the commencement of the present year.

DENTAL EDUCATION IN FRANCE.

In a former issue we noted that the *Institut Odontotechnique de France* was intended to form for French dental students the long-waited for means of supplying a really efficient education in the dental branch of the medical and surgical profession.

We have now before us a prospectus of this new Dental College, which enables us to speak at more length than heretofore. The study of dentistry in France has been more or less zealously pursued for many years, and not a few of our most illustrious names hail from across the English channel, but all who are familiar with French dental teaching must confess that it has fallen very far short of the standard fixed for the profession in England. Indeed we find French writers themselves admitting thus much, and regretting such a state of affairs. A keen sense of what was required has enabled the promoters of the new "Institut" to lay its plans so as to efficiently fulfil the gap so long recognized and deplored. How far their efforts will meet with success time only can decide, but we can hardly doubt so well devised an institution, supported by a staff of such strength, can meet with aught but success, nor fail to promote the welfare of dental education in France.

At Rue de l'Abbaye now is domiciled this new college, with both school proper and clinical school and the *Société Odontologique,* a trio which ought to make a strong stand for France in the international competition of dentists, which increases in keenness day by day.

We cannot in this place indicate the staff which has been selected to lead off the ball at the new *Institut,* but we may refer our readers to another column where full particulars are to be found. It will interest many among us to see in the list the name of Dr. Mordaunt Stevens, a former House Surgeon at the "Dental Hospital." America lends her aid to the new undertaking in the person of Dr. Bogue, while the well-known names of Le Fort, Sappey, Bouchardat, and many more, offer a most encouraging halo of professional merit wherewith to inaugurate for France what we may hope will turn out a "National Training College for Dental Surgeons." We wish the enterprise every success, and trust that the students may be incited to emulate the merits of their illustrious teachers. After all, so very much depends upon the student and his views of professional life and professional requirements—you can neither convert a Cuvier into a Seven-Dials bird-trapper, nor effect a reverse transformation. Meanwhile we shall watch with interest the development of this scheme, and shall trust ere long to find it firmly established, and pursuing a career alike useful and distinguished.

PROPOSED MIDLAND DENTAL SOCIETY.—A meeting of dental practitioners, residing in the Midland Counties, was held in Birmingham, at the Midland Institute, on Saturday 26th ult., to elect officers, arrange for meetings, and other business of a preliminary nature, in connection with the formation of this society. We understand that Dr. Crowther, of Bond Street, Birmingham, occupied the chair.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—At the annual general meeting of this society, which took place on the 14th ult., the following members were elected to serve as office-bearers for the year 1884 —President: James Smith Turner, M.R.C.S., and L.D.S.Eng. Vice-Presidents: Messrs. Henry Moon, T. Charters White, and George Gregson (resident); and Wm. Doherty (Dublin), J. T. Browne-Mason (Exeter), and Richard White (Norwich), non-resident. Treasurer: Mr. Jas. Parkinson. Librarian: Mr. Felix Weiss. Curator: Mr. S. J. Hutchinson. Editor of the Transactions: Mr. Henry Sewill. Honorary Secretaries: Messrs. J. H. Mummery (Council), David Hepburn (Society) and R. H. Woodhouse (Foreign Correspondence). Council: Messrs. G. A. Ibbetson, Ashley Gibbings, Thos. A. Rogers, Chas. S. Tomes, F. Canton, Alex. Cartwright, W. St. George Elliott, Augustus Winterbottom, and Storer Bennett, resident; and

R. Rogers (Cheltenham), W. Hele (Carlisle), A. Wilson (Edinburgh); J. Fenn Cole (Ipswich), Geo. McAdam (Hereford), and W. E. Harding (Shrewsbury), non-resident. Mr. J. Bland Sutton, Lecturer on Comparative Anatomy at the Middlesex Hospital Medical College, read a paper on "Comparative Dental Pathology," illustrated by means of a number of interesting specimens and drawings, in which he indicated the present extent of our knowledge with regard to diseases of the teeth in animals. The retiring President, Dr. Joseph Walker, afterwards delivered a short valedictory address, in which he expressed a strong opinion that some changes were necessary to make the society more attractive to the junior members of the profession, and to enable it to maintain its position against the rivalry of younger institutions.

Foul Breath. — The following prescription is recommended by a French physician:—

℞

Aq. menthæ.	℥vi.
Aq. lauro-cerasi.	ʒiv.
Ess. menth.	♏v.
Sodæ biborac	ʒss.

This to be used as a mouth-wash several times a day.

How do Parasites Produce Disease?—Dr. George Sutton thus answers this question: 1. By producing poisonous compounds, as septicæmia, from the decomposition of tissue; 2. By changing the composition of the blood, as seen in typhus fever, yellow fever, plague, &c.; 3. By the destruction of tissues in syphilis, cancer, &c.; 4. By irritation of the nervous system, as convulsions arising from worms, &c.; 5. By consumption of nutriment, consequently draining the vital forces from the system, as when 20,000,000 trichina invade the human body; 6. By thrombus of small arteries, as seen in the anthrax, &c., &c.; 7. By local irritation, producing total inflammation, as we see in scabies and ring-worm, &c.

A Sad Case.—Those of our readers who have votes for the Wanstead Orphan Asylum, will find a record of a sad case in that of Mr. Octavius King, who practised for many years as a Surgeon Dentist at Brecon, South Wales. His short illness (of rapid consumption) and early death prevented him making any provision whatever for his widow and five young children (the eldest eight years of age). It is desired to obtain the election of his fifth child, Frederick Dallas Ll. King, aged three years, at the ensuing May election. Proxies will be thankfully received by the widow, Mrs. O. King, at her residence, Ledbury Road, Hereford. A correspondent suggests that proxies might also be sent to the executive committee of the Dental Benevolent Fund.

RIGHT-HANDEDNESS.—Much discussion has taken place as to the *raison d'être* of our being right-handed. The common explanation—viz., that it is the result of education fails, as we find animals are right-handed. Among birds, parrots are distinctly more prone to employ their right foot; wasps, beetles, and even spiders are said to employ the right limbs more than the left. It is worth while noticing whether these statements are borne out by fact.

PROPOSED NEW DENTAL HOSPITAL FOR MANCHESTER.—We print a full account of the proceedings of a meeting convened to discuss this important subject. We reserve our criticism for the present.

WE observe a considerable increase in the number of names in the lists of the Dental Benevolent Fund which is printed in our columns. Whatever may be urged against the movement, it seems likely now to make headway, and will, we may hope, eventually show itself really to be of practical use.

AN interesting instance of how our profession can achieve "doughty deeds," and reap the well-merited honours of such benefaction, comes to us from Cornwall. Mr. Tuck, a Dental Surgeon, of Truro, was recently called upon to undertake the case of a woman who suffered from congenital non-closure of palatine plates. Mr. Tuck's treatment resulted in the patient obtaining an almost perfect enunciative power. The Surgical-Aid Society, at whose behest Mr. Tuck treated the case, notified their warm appreciation of Mr. Tuck's skill and patience by conferring upon him a life governorship of the Society.

GOOD SOLDER.—The "Independent Practitioner" gives the following:—

Hard silver—
Silver, 2 dwt.; copper, 9 grns.; zinc, 3 grns.
Soft silver—
Silver, 2 dwt.; copper, 8 grns.; zinc, 5 grns.
Hard gold—
Gold, 2 dwt.; copper, 9 grns.; silver, 3 grns.; zinc, 1 grn.
Soft gold—
Gold, 2 dwt.; copper, 8 grns.; silver, 5 grns.; zinc, 5 grns.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

AUTOMATIC ADJUSTABLE PLIARS.

Mr. Rutterford has an ingeniously contrived pair of pliars, one blade of which is pivoted about one-fourth of its length from its tip to a false blade placed within itself, and attached to or rather being a continuation of the handle; the effect of which is that on grasping any substance the adjustable blade will adapt itself to its form. For instance, a piece of cylindrical wire will be held with equal firmness throughout the length gripped, or the tapered end of a broach will be equally rigid. Simple as this little implement is, it will be found to meet many a want in both surgery and laboratory.

ASH'S ELECTRIC MOUTH ILLUMINATOR.

Messrs. C. Ash and Sons have made an immense improvement in their electric mouth light and the appliances necessary for its use. The light, which is in an exceedingly small glass tube (not a quarter of an inch diameter), is very brilliant —painfully so to the eyes if full power of battery be employed —is now enclosed in a metal shield, light and convenient sized for use, which has a small mirror placed at an angle facilitating examination of posterior cavities. It has been discovered in practice that a thin metal guard diffuses the heat generated by the lamp over its whole surface and radiates it as speedily, so that there is no unpleasant heat experienced in the month by its use.

The intensity of the light can be regulated to a nicety, first by only admitting a small portion of the carbon plates to enter the fluid of the battery, and secondly by an ingeniously arranged slip-ring, freely movable up and down the handle of the mirror, acting on a resistance coil. As far as the light and mirror are concerned, little is left to be desired.

They have also made improvements in the construction of the battery and its case, which render them both more handy and sightly. It is arranged so that both the electric mallet and mirror may be used simultaneously or either separately. In the centre of the front of the case is a little handle, the turning of which lowers the plates gradually into the fluids, a ratchet wheel holding them at any height; thus setting the battery in action. On the top of the case is a little button, pressure on which instantly releases the ratchet wheel, and a counterpoise weight within the case automatically raises the plates completely out of the fluid, and so reserves the strength of the battery for further use. There are other minor facilities for cleaning the cells—of which there are three—and great flexibility of connecting cords, small in themselves, but of essential importance that should be seen to be fully appreciated.

In addition to the careful instructions supplied with the instruments, we would specially caution any unfamiliar with powerful batteries such as these,—that *no more battery power* should be used *than necessary,* for so intense can the heat be applied by incautious hands that it is quite possible to destroy the fine carbon filament in an instant, whilst with judicious management the burner is practically indestructible.

The battery will keep in continuous action for ten hours and upwards without renewal of the fluid, but this time may be divided into any number of irregular intervals, so that with ordinary use weeks might elapse, and then the refilling is both simple and inexpensive.

NEW NITROUS GAS BOTTLE HOLDER.

Mr. Ritchie has introduced a new method of securing nitrous oxide bottles—either singly or in pairs, with connecting unions—to the back or side of the operating chair, or in such position as to be most suitable to the convenience of the administrator. It is composed—firstly, of either one or a pair of strong iron rings, with four thumb-screws to each to grip the bottle or bottles, as the case may be; from the side to this ring, or from between the two, is a strong flat tang or hook bending downwards; and secondly, an ornamental socket in metal to be fastened on to the chair.

When gas is to be administered, it is only necessary to slip the flat tang into the socket, and the bottles are to all intents and purposes a fixture to the chair itself, from which they can be as easily detached.

Molar with Four Roots.—A short time since a left superior first molar was extracted which had four distinct roots. They diverged to such an extent the tooth had to be split and the roots taken separately.

Abstracts of Foreign Journals.

DENTAL REGISTER.

"ALIMENTATION AMONG SAVAGE AND CIVILIZED PEOPLES," by Dr. Paul Caseneuve.

Determining circumstances of variety in alimentation are found in—physiological condition of race, physical, climateric, religion. The consequences determine many sociological problems, family, relation of man with man (*e.g.* cannibalism) &c. The factors of all sufficient diets are—albumins (*e.g.* white of egg), starchy matters, fatty matters. Savages eat uncooked flesh and raw vegetable matters. Prehistoric men seem, from remains found in caves in which they lived to have resembled modern-day savages in this respect. Later we find evidences of agriculture, and with it evidence of cooking. Savages, we are told—except the New Caledonians—are all drinkers of fermented liquors. Zyphus (Egypt) Booza (Egypt. modern), cerevisia (Germans), beers are made from cereals. The use of these was succeeded by that of alcohol, tea, &c. The changes in alimentation are then traced through the pages of history. It is shown that famine, &c., even in comparatively modern times, caused a return to savagery and cannibalism. Civilised man, in choosing an alimentation, is influenced by more complex motives than the savage—religion makes satisfying the gross appetites subservient to a rite or festival (*e.g.* funeral repasts).

The savage is also influenced by quasi-beliefs, *e.g.*, Malays eat tiger meat to acquire the sagacity which the living tiger evinces. New Zealanders make their children swallow clots of blood to make them insensible to pity. The customs of various races and tribes are cited, which go to show that religion induces the most curious contradictory courses to be pursued—on the one hand we meet with cannibalism, on the other flesh of all sorts is interdicted. Influence upon race, ethics, &c., which food exerts is there treated of. Horticulture and floriculture follow the use of vegetable diet; these lead to growth of study of the beautiful, &c. National traits are said to be traceable to national diets; and even the nation's future is said largely to depend on the food the nation takes.

AMERICAN JOURNAL OF DENTAL SCIENCE.

"PERICEMENTITIS: its Manifestations in the Oral Cavity, and its serious Effects upon the General Health."

Dr. G. A. Mills, after stating that pericementitis has been said to be due to age, adverts to the great importance of an early diagnosis and prompt treatment. The bulk of the first instalment of this paper is, however, occupied by an eulogium upon Dr. Riggs, for his work done in promulgating more accurate views about that condition of the gums and alveolar borders, which is called after his name.

ZAHNTECHNISCHE REFORM.

"NEW METHOD OF FIXING ARTIFICIAL TEETH," by W. Kay, Berlin.

A new method is suggested by which a single front tooth may be firmly placed without hammering or rivetting the artificial crown. After boring a sufficiently wide place in the root, a *pivot* is filed out of composition wire, one end of which is round and rough, and the one part four cornered, the other end being narrow and pointed. Over this is a husk of thin platina. After the pivot is made firm in the root, the husk is placed on the protruding end of the pivot, and an impression is taken of the root and the other parts. A second stronger pivot is now placed in the husk, the impression pencilled with soapy water and gypsum poured over it. The husk is then taken from the gypsum impression, and placed on the pivot in the model, and fitted on to a root plate of fine gold. The husk is fastened on to the plate with wax and drawn from the pivot. After the husk is filled with chalk, it is plastered with gypsum, the wax heated, and husk and plate filed together. They are set again on the model, and a suitable tooth made; wax is placed at the back of the tooth, gypsum poured on it, the wax melted, the husk filled with chalk, and the hollow filled with lead and small pieces of gold. It is then cleaned and the artificial tooth crown put in the mouth. If the root is strong, the root pivot can be rivetted, but if it is feared the rivetting will loosen the tooth, other means must be used to make it firm. There are two methods of doing this. First, when the tooth crown is on the model, bore a canal from the back surface of the gold contour to the husk, provide it with joints, make a little screw and hollow the canal in the gold contour for the screwhead, put a fine-pointed pencil through the canal that it may leave a mark on the proof pivot of the model, at this mark file a semi-circular hollow and try if the screw is the right length. If so, mark the root pivot in the same place, file a little hole in it, set the crown in and screw it in. A second way is to use the plumb instead of a screw. In order to do this the canal should be somewhat deeper, provide the pivot with a hole and make it somewhat rough. The canal must be filled with cement or gold. This method will be found very superior to using the great caoutchouc plate.

"Herbst's Method of Gold Stopping."

Herr Herbst's method of stopping with gold, using boring instruments, has been used with great success, and not being expensive they are easily procurable. Of course, even with this method it is not as easy as filling a tooth with amalgam. He who is skilled in stopping with gold will soon learn to manipulate with them, but he who is wanting in skill will find this method more difficult than the ordinary one. The chief instrument must be had in different degrees of strength, some are used, when the cavity to be filled is large, to fix the first layer of gold and then to smooth the finished filling. They can be used for polishing amalgam fillings. One consists of a cemented sewing needle; this is used for approximal fillings. Herr Herbst uses only gold prepared by Herr Carl Wolrab, of Bremen; and as he receives it fresh he does not heat it except for the last layers of contour and central fillings. Those who have gold lying long by should heat it on a piece of Maniere glass.

"Is Caoutchouc hurtful to Natural Teeth?" by J. Ehricht, Berlin.

Dr. Klamann, of Luckenwalde, considers the much-used india-rubber sucking rings to be a fruitful source of caries in the incisors of children. As soon as the child is weaned it is given an india-rubber ring to suck. After long usage the caoutchouc becomes hard and indented, so that it injures the mucous skin of the mouth, it has caused abscesses and perforation of the gums in young children. As concerns the harm done to the teeth by caoutchouc the question is not new. It is strange that since the introduction of caoutchouc a generation has died out—a generation which did not lack opportunities of observation—and yet the question remains still unanswered. The question as to whether hard caoutchouc is injurious to the teeth in the same manner is of interest to us. Soft vulcanized caoutchouc decomposes in the mouth very rapidly, hard caoutchouc, as dentists use it, does not. This is certain, that if caoutchouc is used for the support of an artificial piece it ruins the natural teeth which are disturbed by it, just as a hollow tooth ruins its healthy neighbour. It may be asked, where are the proofs? Those people who have had artificial teeth put in might have lost other teeth without the help of caoutchouc. Natural teeth which have to support an artificial plate would be weakened whatever material was used. Of two evils choose the least. Dr. Klamann has found, by a long experience, that where gold is used the teeth remained good, even when it had been in use for ten or fifteen years. But in cases where caoutchouc had been used for two or three years the teeth were considerably weakened. Where gold and caoutchouc have been used in the same mouth the teeth surrounded by gold remained firm and good, and those by caoutchouc had become very carious.

Gold claspings may be prepared in the following way. To spare gold a lead model may be formed exactly like the clasping; this lead model can be drawn on the gold plate and the piece cut out with scissors and saw, correcting it afterwards with a file. This gold plate can be bent according to the tooth, and very often a hammer must be used as the tongs will not suffice. If the clasping is very wide one or two holes should be bored to receive the pivot. The clasping must now and then be heated before it is soldered. Gold should in no case be used for these purposes under 14 carats. Soft caoutchouc is often used, and looks very well, but does not tend to preserve the teeth. Soft materials should not be used in the mouth, as they decompose so rapidly, except in the case of old people with very sensitive mucous skin. Another method is to paint the sides of the palate with caoutchouc and chloroform covered with guttapercha, slightly warmed, and placed in the mouth. Soft india-rubber has been tried, but the material was easily decomposed, and those who attempted it have gone back to the firm plate. In conclusion, if claspings are needed, it is best to make them of gold; but where there is a firm root a pivot may be found useful.

"Setting of Artificial Jaws."

Not much has been known concerning the setting of artificial jaws on account of the rarity of the defect and the difficulty of the setting. Resection may be necessary from many causes, syphilis, growths in the nose or mouth cavities, necroses of the bone and intense neuralgia might lead to it, though it would not be the primary cause. In cases of defect through resection the removal of bone and healing of soft parts cause a considerable disfigurement of the face, the soft parts fall in, the face becomes drawn and sharp owing to shortened muscles, and as no separation exists between nose, mouth and throat, speech is defective and eating is made very difficult. The difficulty is to get a true impression, the mouth is so narrowed and the opening so small that a tea spoon can scarcely be put in, and if one wishes to put in an impression spoon a second difficulty arises, the lower jaw is so near to the upper jaw, and if the teeth still remain on the side which has not been resected, it is plain that an ordinary mouthspoon could not be inserted, still less could one with sufficient impression material be put high enough to obtain an exact impression of the hollow left by the vacant bone. So the side of the spoon, which is towards the teeth, must be without any edge. Wax, guttapercha, or Stents must not be used, as the taking out of the impression is even more difficult than the putting in, and soft material would become distorted, and would give a wrong impression of the teeth which are to serve as a hold for the setting. In these cases there is no other material but gypsum. On taking out it breaks on the outer side of the teeth, and the single parts can be set again in their proper places and made firm with wax. After fixing the pieces together, the model is poured. But a simple plate is not sufficient, it must be used for mastication. A strong guttapercha plate is laid on the model, which presses on one side against the teeth, so that the proof plate gains a hold in the mouth. The cavity of the model is now made in wax, and allowed to harden, then a piece of soft wax is introduced, till the under teeth, in biting, mark it. The impression of the lower-jaw is then taken, the model poured, and that and the upper model are then set together in the articulator.

LE PROGRÈS DENTAIRE (*December*)

Continues the translation of Professor Coleman's work on the "Surgery and Pathology of the Teeth." It contains also a *rèsumé* of a treatise upon "Development and Histological Structure of the Teeth," by Dr. Lodovico-Calembrun Mercure.

The first part deals with the origin and formation of teeth. Our author says, "The teeth are developed from small papillæ, visible at an early period of fœtal life, and situated in a furrow clothed by mucous membrane. In proportion as they increase in size, these papillæ take the form of the crowns of the teeth, of which they respectively are the fœtal structure. Having attained this epoch in their formation they commence to undergo true dentification, the development of the roots gradually pushing up the crown until they completely free themselves from the gum. Before this stage in development has been reached the enamel becomes formed." After this brief sketch our author quotes previous writers upon the subject of the early stages of dental evolution. Eustachius (1563) was the first, we are informed, to notice the disposition and arrangement of the teeth in the jaw before eruption. He also discovered the presence of the permanent incisors and canines as existing at the same time as the temporary teeth. The researches are then noted, of John Hunter, Jourdain, Blake, Fox, Serres, De la Barre.

Goodsir was, we are told, the first to formulate any theory upon the subject of the development of the teeth.

Returning then to the structure, the dental germ is said to be composed of three parts enamel, dental papillæ and dental sac. This last is composed of two coats—an external one, dense, thick, and composed of connective tissue; an internal soft and gelatinous, the whole enveloping germs. The dental papillæ is composed of two parts, a central or axial containing a connective tissue framework supporting vessels of nerves, outside this the enamel membrane. Some authors state that a preformative membrane (of Raskkow) separates dental papillæ from the enamel organ. The enamel organ forms a kind of cap with its concavity surmounting the dental papillæ, its convexity applied to the internal surface of the dental sac. It and the dental germs are connected with the epithelium of the mouth by the guberna culum dentis. In the eighth or ninth week of intra-uterine life the buccal epithelium which fills up the dental grooves of the two jaws becomes arranged in three layers of cells—the first, flattened, pavement epithelium; the second, short and columnar; third, cylindrical. At the time of formation of dental germs the epithelium presents a slight elevation, called by Kölliker the "dental crest." From the deep part of this crest, and from the second and third layer of cells, is developed the enamel organ.

(*To be continued.*)

DENTAL COSMOS (*January*).

"A CONSIDERATION OF THE MERITS AND CLAIMS OF ARTIFICIAL CROWN AND BRIDGE-WORK," by J. L. Williams, Newhaven, Con.

(*Continued from p.* 27.)

The single crown is the main feature in all bridge-work. It consists of three parts—a square pin of platinum and iridium which enters the enlarged pulp-canal, a cap of gold, and the porcelain face, which is the ordinary plate-tooth. The crown is thus made:—The end of the root is smoothed by corundum wheels and scalers, a gold ferrule is fitted around it. To entirely conceal this ferrule, the labial surface of the tooth must be bevelled above the margin of the gum; the ferrule having been soldered may be placed in position, and the contour line marked upon the front. Pure gold (rolled to No. 34 American guage) is to be used for soldering. A suitable tooth having been selected and backed with pure gold or platinum, the cervical end is ground and placed upon the front bevel of the cap, all the fitting being done while the cap is in position. After fitting the cap is removed and attached by strong resin wax and replaced in position (the wax being warm). The tooth and cap are now to be united by a solder of higher melting point than that used for the backing. The root end being dried, oxyphosphate cement (made thinner than for fittings) is placed in pulp cavity and cap. The crown is then placed by firm pressure and the surplus cement removed.

The bridge-work is simply an extension of the crowns over spaces where the natural teeth have been lost. (Some carefully prepared plates are here inserted in the text which explain the process.) When the space to be bridged is due to loss of more than one tooth, the procedure is as follows:—The crowns being fitted, as described above, there is an impression taken in plaster, the crowns remaining imbedded on the removal of the impression. The impression is varnished and oiled, and a model of investing-material poured. The mass having hardened, the impression is carefully cut away, and a model of the mouth with the crowns in position is thus obtained. A "bite" is taken, and the usual articulation secured. The remaining crowns having been backed are fitted, and the face of the work imbedded in investing-material. The whole piece is then united by soldering. If there is extensive decay it is best to excise the remainder of the tooth and replace an artificial crown. When only one molar or bicuspid is lost sufficient support is gained by the cap which is made to pass over the remaining molar. If the first molar and second bicuspid are lost, the anterior end of the bridge may receive sufficient support from a strong spur, which may rest in the groove or suleus betweeen the cusps of the first bicuspid. Cases for twelve or fourteen teeth may be fixed on three or four roots.

"EXPERIMENTS WITH CELLULOID AND THE NEW-MODE HEATER," by S. J. Spence, San Francisco.

Thirty experiments gave the following results:—

1. Plaster investments require one and a half hours in the oven of the heater (400°), 2 hours to raise their temperature to 320°. Drying them over a gas-burner takes as long and loosens the plaster from the flask.

2. Celluloid can be moulded in from 5 to 10 minutes at 320°, in 20 or 25 minutes it degenerates, becoming brown, hard and brittle, in 25 to 30 minutes it burns up.

3. Celluloid will burn at low or high temperatures according to the length of time of exposure. Therefore it is unsafe to leave them for any length of time exposed to heat.

4. Celluloid is more liable to spoil if not under pressure, therefore flasks should be closed with all expedition.

5. Celluloid, unless worked at a high temperature, so as to flow readily, and with well-hardened plaster, will press the model and teeth out of shape.

6. Steam brought in contact with celluloid causes it to puff up and degenerate.

7. Plaster retains heat longer than metal.

8. Tinfoil discolours celluloid at a high temperature.

9. Celluloid after moulding is hardest at the surface, porous within.

The series of experiments which led to these results is then detailed. Our author then proceeds to show that thin edges of celluloid will soften in hot drinks in the mouth. Thus the festoons of gums left thin will shrink from the tooth, producing what may be termed a free edge of celluloid gum, under which dirt deposits, which shows through the semi-translucent celluloid. This is obviated by thickening the edges of the festoons. The inter-dental celluloid gum should not be cut away, as the spaces so left cannot be properly cleansed. Celluloid worn for some years loses its colour and becomes of a dull vermilion hue or even black. It is neither so elastic nor so tough as vulcanite, and hence wears away, and loses its smooth surface in the mouth, and is unfitted for clasps, and is a little more difficult to work than rubber. The discoloration does not extend far into the substance, and so can be removed by brush-wheel and pumice.

DENTAL ADVERTISER, BUFFALO (*January*).

"DENTISTRY AND OTOPATHY," by F. Park Lewis, M.D., Buffalo.

Dr. Lewis commences his paper by referring to the anatomy of the ear. The auricle or visible ear collects the sound, the outer ear conveys it to the tympanic membrane, which separates the external from the middle ear. In the middle ear all the little bones of the ear and the openings into the auditory portion proper, the internal ear and by the Eustachian tube into the pharynx or "throat." This tube is lined by epithelium, which is structually continuous with that of the throat. Ganglia are said to be storehouses of nervous energy or points of transfer of nervous currents. It is through certain ganglia that the teeth and ear are brought into intimate relation. The outer ear is largely supplied by the auriculo-temporal nerve, which has a branch from the otic gangleon. Within the tympanum are communications between filaments of the glosso-pharyngeal, the carotid plexus, the facial, and otic gangleon, which last communicate directly with the inferior maxillary nerve which supplies the teeth. The chorda tympani passes through the tympanic cavity, and becomes united with the gustatory branch of the lingual, which supplies the tongue, and is hence in close propinquity to "the throat opening of the ear," "the brain opening, or internal auditory meatus," and with the external auditory meatus and that of mastoid cells. All non-striated muscular fibre, we are reminded, are under the control of the sympathetic system. Applying these anatomical details, the infantile organism is very easily affected by perverted nervous energy.

Von Troelsch has shown that the eruption of the deciduous teeth is often accompanied by inflammation of the middle ear which may lead to rupture of the membrane and purulent otorrhœa. Infantile eclampsia (Cooper) is often due to middle ear trouble. Liston is quoted to the effect that dental caries may cause abscess, violent and continuous headache, glandular swellings of the neck, enlargement and abscess of the tonsils, ulcerations of the tongue and lips, painful swelling of face, dyspepsia, &c., &c.

Misplacement or impaction of wisdom teeth is a common cause of sympathetic trouble. The non-development or arrested development of the lower jaw may join the vertical process so far forward as to prevent the due eruption of the wisdom tooth. Various cases are cited which exemplify the various evils such as aural neuralgia, cysts in the jaw, &c., which may ensue upon the non-eruption of wisdom teeth. Red rubber plates and amalgam fillings are believed by Dr. Park Lewis to lead to diseased conditions of the middle ear. Mercurial aural catarrh is so insidious and slow in progress as to be difficult of detection; still we must be on the look out for it. A case of this is cited in which a gentleman wearing a red plate for ten years suffered constantly from chronic inflammation of the middle ear, with canker sores about lips and mouth; these troubles subsided on replacing the red by a black plate. Badly fitting plates give rise to irritation which causes inflammation in middle ears as well as gums. Neuralgia is often relieved by replacing amalgam by gold—? mercurialism. The teeth as sound conductors.—Dr. Lewis notices the importance of possessing teeth, since they conduct sound to the auditory nerve in cases when the middle ear is disorganised. Hence in false teeth the material selected should be one which conducts sound well.

Broken Files made use of.—A use for broken pieces of separating files. With a round-faced corundum wheel grind a groove on the flat side the width of the tooth, a little deeper at one edge than the other, then file two notches in the edge with a half-round file. You will have a matrix for approximal cavities in bicuspids and molars any length you desire, and which will hold rubber-dam down and as far out of the way as wanted. It can be applied with ordinary clamp forceps.

Dental News.

MEETING OF DENTAL SURGEONS IN BIRMINGHAM.

A MEETING of Dental Surgeons was held in the Birmingham and Midland Institute, on Saturday, January 12th, to consider the desirability of forming a Dental Society for the Midlands.

There were present:—Thomas Howkins, M.R.C.S.Eng., Birmingham; Adams Parker, L.D.S.Eng., do.; William J. Watson, L.D.S.Edin., do.; W. T. Elliott, L.D.S.Edin., do,; Chas. Sims, L.D.S.Eng., do.; F. E. Huxley, M.R.C.S., L.D.S.Edin., do.; W. H. B. Neale, L.D.S.I., do.; F. R. Batchelor, L.D.S.I, do.; T. D. Miller, D.D.S., do.; F. J. Sims, do.; Alfred Clarke, do.; F. Martin, do.; A. W. Whitehead, do.; Dr. J. S. Crapper, L.D.S.I., Hanley; S. F. Clarke, L.D.S.I., Burton; Dr. Gregory, L.D.S.I., Cheltenham; G. Glover, L.D.S.I., Derby; A. B. Verrier, L.D.S.I., Weymouth; John W. Roberts, L.D.S.Glas., Dudley; E. Roberts, L.D.S.Glas., West Bromwich; James Williams, L.D.S. Eng., Walsall; H. Owen, L.D.S.I., Wolverhampton; Rd. Owen, do.; J. Humphreys, L.D.S.I., Bromsgrove; H. R. F. Brookes, L.D.S.I., Banbury; T. M. Cottam, L.D.S.I., Oswestry; F. J. Thorman, L.D.S.Eng., Leamington; F. H. Hudson, do.; W. Brown, L.D.S.Glas., Stratford; O. A. Dennis, L.D.S.I., Nottingham; and W. H. Key, L.D.S.Glas., Rhyl.

The first business was a practical demonstration by Mr. A. B. VERRIER, showing his process of working continuous gum for either rubber, celluloid, or plate-work. It is needless to say that Mr. Verrier proved the superiority of this class of work, and earned the thanks of all present.

Dr. CRAPPER exhibited models and appliances for regulating teeth, being specimens of cases which had come under his treatment, and it appeared that he had attained wonderful results in some cases.

On the motion of Mr. W. J. WATSON, seconded by Dr. MILLER, Mr. T. HOWKINS, was unanimously voted to the chair.

The CHAIRMAN opened the proceedings by remarking that, as they were all well aware, the object of the meeting was to consider the desirability of forming a local dental society. In order that the business might be carried out in proper form, he would first ask Mr. Watson to read the circular convening the meeting.

Mr. WATSON having read the circular, proceeded to state that he had received a number of replies from persons willing to join the Society. Of the number of communications sent in response to his circular, some thirty were willing to join, while there were only ten against it.

The CHAIRMAN remarked that from what Mr. Watson had said, there were thirty persons willing to join the Society, which was to be promoted for the diffusion of knowledge pertaining to matters of dental surgery, the encouragement of intercourse among the members of the profession, and the furtherance of the interests of dental surgery as a branch of medicine. With regard to the initial work that had been done previously, he knew nothing at all. He had simply received a circular, as others had done, and after deeply considering the matter, he had come to the conclusion that it was eminently desirable a Dental Society in the Midlands should be established. So far as the Odontological Society was concerned, he was a member for some years, but, for the majority of provincial practitioners, the head-quarters of that Society were too far away, and, as far as he was concerned, owing to the distance which had to be travelled, his attention and interest became less and less, until at last he gave it up altogether. He felt that unless they could have a society at their doors, as it were, not much good would be done. They wanted the opportunity of social and personal intercourse, some place where they could get to know and respect each other, some means of resort where they could exchange opinions, in short, do anything which might have a tendency to the advancement of science, and render their services to the public more efficient. They required a society which would afford opportunity for frequent meetings, and thus promote that social intercourse they appeared unfortunately to be so much in need of, and by such means assist and encourage those friendly courtesies and meritorious efforts which should certainly exist among those who practice an honourable and most useful profession.

Mr. J. W. ROBERTS moved the following resolution, "That with the object of elevating the dental profession; of furthering the interests of Dentistry as a branch of General Surgery and Medicine; of encouraging intercourse among the members of the profession; and promoting the diffusion of scientific and practical knowledge in all matters pertaining to dental surgery; this meeting pledges itself to support a Dental Society, having its ordinary place of meeting in Birmingham, and to be called 'The Society of Dentists.'" He contended that the Society would prove very beneficial to Birmingham, seeing that hitherto the practitioners had been little known to each other. These were independent of others twenty-five L.S.D.'s within a radius of 10 or 15 miles, and when Mr. Watson first mentioned the question of the Society to him, he thought it was quite possible to form one, having for its object social intercourse and the advancement of dental science, and at the same time entirely devoid of dental politics. It was not proposed to promote it with a view of opposing the British Dental Association. He repeated and wished it to be distinctly understood that there was no idea of opposing the British Dental Association, but rather that the new society should be a support to it. By forming a scientific society they were of the opinion they could assist the British Dental Association very much more than any ordinary branch of that association could do. At any rate, they did not wish to oppose the association; many of them were members of it, and he hoped all connected with the local society would become members also. By means of the society they could meet in social intercourse, and, perhaps, one may give information which another one would not know. The medical profession, with their Midland Society, which meet periodically, reading papers and submitting reports, with the result that the society had proved beneficial to the district. The Odontological Society had also proved of great benefit to a large number who had been able to avail themselves of its advantages. If this society was formed, it would afford opportunities for the reading of papers and for practical demonstrations; and they only asked for the opportunity of meeting in this way with the view of advancing the interests of their own particular profession.

Mr. S. F. CLARKE seconded the resolution, adding that one important point to consider was what kind of a field had they got to work on in the forming of a new society. He pointed out that there were something like 4,000 names on the Dental Register, and out of that number, he thought, they could not claim more than 500 as belonging to the British Dental Association. Altogether, they had, he contended, something like 80 per cent. to work upon. Throughout the whole of the country there was not a place more accessible than Birmingham, affording as it did, from its central position, every facility to travellers from all parts. He ventured to say there was no place in which dentistry and surgery were more closely allied than in Birmingham. There were various large hospitals and a Dental Hospital, together with other attractions sufficient to bring people into Birmingham before any other place. By this society they could meet monthly or bi-monthly, according as was deemed desirable; but with a society which simply moved from place to place one meeting might be convenient and 12 months after it might be impossible to attend owing to the great distance to travel. For these reasons, he contended, Birmingham was a fit and proper place in which to form a society. He would not limit the society to the dental profession only, but there should be power to elect any gentleman who had made himself known in the scientific world. He did not wish to cut off any man; his idea being to hold out the hand of fellowship to any man who upheld the dignity and status of the profession. Some minds had apparently been exercised as to the society clashing with any other society in existence. It was a mistaken idea that the promoters of the new society had any feeling of opposition or rivalry to any other society. To his mind it did not matter how many societies there were so long as they did good work, and all leading to one end—advancement and elevation of the profession generally. Then if there were two or three or four societies, he had no doubt there were many who would join them all, especially if their places of meeting were within easy distance.

Mr. B. NEALE said he was glad to find that the new society was not to be an opposition to the British Dental Association, but rather as a support, for he had very grave doubts about its success if not connected with the principal association. He commented on the work the British Dental Association had done, the powerful organization it had become, instancing as an example the large body of high-class and scientific men who assembled at the recent Dentists' meeting. A local society, in his opinion, would not be able to attract such a body of men to Birmingham. Considering that the British Dental Association had become a really powerful body, they ought to join it in forming the new society.

Mr. C. SIMS criticised the policy of convening the present meeting in face of what was done, and the two resolutions which were carried at the previous meeting in September. He claimed that by carrying out those resolutions the Midland branch had done all that was asked by the meeting, and whatever was still wanted would be taken into consideration by the Council.

Mr. ADAMS PARKER remarked that, in forming the new society, he thought it would be in connection with the British Dental Association.

Mr. WATSON explained that the question of joining with the British Dental Association was one which it was proposed to leave to the Council after the Society was formed. He had no interest to serve in the matter, and he simply wished for the members to decide whether they should become a branch of the British Dental Association or not. He thought that the present meeting proved there was a want of such a society, and he was very sorry that Mr. Sims and his colleague could not fall in with the same views. As for the Midland Branch, that did not answer their wants, which could only be met by a branch, with its head quarters in Birmingham, or an independent society, with its ordinary place of meeting there.

Dr. **Miller** said he was confident that there was great anxiety on the part of many members of the profession to join together and form a society which should not only be non-political in character and philosophical in its aim. If the British Dental Association was established on a good sound basis, the executive would be extremely glad to welcome it as a factor in helping to make the profession respected throughout the district. It was not to be expected that they would be able to secure so many eminent gentlemen at their ordinary meetings as were present at the recent meeting in December; still, at the same time, he felt sure if they got into good working order, there was not one of those gentlemen who would not do all in his power to promote the interests of their new society, or decline to attend a meeting when invited. They did not want to be influenced by outside matters; they wanted the opportunity of hearing special lectures and seeing practical demonstrations. He thought there was quite a sufficient number of persons present ready and willing to found this "Society of Dentists."

Mr. **Humphreys** remarked that the grounds on which the society was to be formed, according to what had been said, were to be as broad and comprehensive as possible, and include every respectable practitioner. He thought it would be a pity for any society in Birmingham not to follow out that plan, and accept every respectable Dentist in the town and country. He thought the B.D.A. and its Midland Branch met all their requirements.

Mr. **Hinds** said that for his part he did not assume that the society was to be confined to Birmingham. He had no doubt that those outside would respond to the invitation, and patronise the society. To show the advantage of social intercourse, he remarked that though connected to the dental profession for many years, he had that day witnessed a case which he had never seen demonstrated before. He did not suppose the society was to be connected with any other, or that it was to be simply a local affair; at the same time he hoped that every one connected with it would become a member of the British Dental Association.

Mr. **James Williams** asked what had the British Dental Association done for them. Some three or four years ago Mr. Sims asked him to become a member, to which he at once agreed, and ultimately he received a form to get filled up by three members of the association; and they would scarcely believe him when he told them that he did not know three gentlemen who were members of the association to whom he could apply to testify to his eligibility. Consequently, to-day, he was not a member of the British Dental Association. They wanted a society for social intercourse and mutual improvement, and that was what they were now aiming at.

Dr. MILLER questioned whether the British Dental Association could prevent them from meeting together. They did not want to be political as to create a revolution, but simply to enjoy in their own way the advantages of social intercourse, and thus promote the true interests of the profession.

After a few remarks from Dr. CRAPPER in opposition, the resolution was put to vote.

The CHAIRMAN declared it even voting 11 each side; but as there was some confusion, owing to the holding up of both hands, it was decided to test the voting again with one hand only. The resolution was then lost—11 voting for and 12 against. This difference is attributed to the action of Mr. Martin, assistant to Mr. Sims, who voted the second time, but not the first. Mr. Watson pointed this out, and protested against the vote being counted, as it was not expected that gentlemen would bring their assistants to vote as they were told, more especially that two or three gentlemen who were anxious to vote in favour of the resolutionhad been compelled to leave in order to catch their trains in consequence of the protracted discussion.

Several supporters of the resolution said it did not matter about the result of the voting, as they should at once proceed to form a society. It was then announced that there would be another meeting held to form the society.

Mr. WATSON moved that a hearty vote of thanks be given to Mr. A. B. Verrier for his very able and interesting demonstration. He felt sure it had afforded a considerable amount of pleasure and instruction to all. It was seconded and carried with acclamation.

A vote of thanks to Dr. Crapper and the Chairman terminated the proceedings.

MEETING OF DENTAL STUDENTS' ASSOCIATION OF GLASGOW.

A meeting of the Dental Students' Association of Glasgow, was held in the Dental Hospital, on Wednesday, the 16th ult. Mr. JAMES CUMMING, L.D.S., in the chair.

The Treasurer and Secretary's report having been submitted to the meeting showed the Society to be in a flourishing condition, having a membership of over fifty.

The following office-bearers were then elected:—

Hon. Presidents—Messrs. J. R. Brownlie, L.D.S., and W. S. Woodburn, L.D.S.

President—Mr. James Cumming, L.D.S.

Vice-President—Mr. Wm. Lany, L.D.S.

Treasurer—Mr. Wm. Carruthers, 68, Bath Street.

Secretary—Mr. James Cameron, L.D.S., 111, Main Street, Gorbals.

Custodier—Mr. James McCash, L.D.S.

Council—Messrs. Jas. Cumming, jun., L.D.S.; D. R. Cameron, L.D.S.; Hy. Gurcore, John Liddle, Frank McCulloch, B. Sutherland, L.D.S.; R. M. Wills, L.D.S.

THE VICTORIA DENTAL HOSPITAL.

A MEETING of gentlemen interested in this charitable institution was held in the Mayor's Parlour of the Manchester Town Hall, last week, having for its object the view "of bringing it under public notice and of enlisting the support of the inhabitants of Manchester and the neighbourhood." The circular convening the meeting also stated that "the hospital will be opened as soon as the arrangements now in progress are completed, probably within the next few weeks." The object of the hospital is first to provide gratuitous advice and aid for poor or deserving patients only who are suffering from disease and irregularities of the teeth, and secondly to establish a school of dentistry in connection with the Owens College. There was a very large attendance.

The MAYOR of SALFORD (Alderman Makinson) presided, and amongst those present were the Bishop of Salford (Dr. Vaughan), Professor Gamgee, Dr. Lloyd Roberts, Dr. Hardie, Dr. Sinclair, the Rev. Dr. Burton, the Rev. S. Farrington, Dr. Hewitt, Dr. Cullingworth, Mr. Rueben Spencer, Mr. J. Broome, Dr. Samelson, Alderman Walmsley, Mr. F. E. Bumby (Hon. Sec.), &c.

The MAYOR of SALFORD said that all present knew that numbers of persons in the upper and middle classes of society had at some period of their life to seek the aid of the Dentist. They were in a position to obtain that relief, but in the case of the poor that was not the case; and as he understood it, that meeting had been called for the purpose of forming a hospital which would afford the necessary relief to the humbler members of the community.

The SECRETARY read the notice convening the meeting, and also a report which has been prepared by the provisional committee. It stated that the object of the meeting was to bring the Victoria Dental Hospital, established for the relief of the suffering poor, and as a basis for dental education, under the notice of the public of Manchester. So great was such an institution needed that it might be a matter of surprise that it was not established years ago. It appeared that fully ten years since the establishment of such a hospital was under the consideration of the leaders of the profession, but by reason of the very general feeling that the hospital, in order fully to serve its proper ends, should be connected with the medical school of Owens College—at the time fully occupied with matters connected with the removal to the new college buildings—this question was allowed to remain for a season in abeyance. The movement for obtaining a university charter for Manchester seemed a reason for further delay, and after the granting of the Victoria University Charter the application for the power to grant degrees in medicine occupied the attention of the college authorities, and the friends of the hospital scheme considered it better to wait until it could be established on such a basis as to meet all required by the public and the profession. Now that all those obstacles had disappeared, the movement had been revived, and had practically received the unanimous support of the dental profession. In the autumn of last year a private meeting of a large number of the leading Dentists of Manchester was held for the purpose of considering the advisability of establishing a dental hospital of such a character as to be at once a real service as a charity, and a basis for the education of dental students. The opinion of that meeting was unanimously in favour of the formation of a dental hospital, and a provisional committee of dentists was appointed to consider the matter in detail, and to arrange all necessary preliminaries. The bye-laws were settled, and premises had been taken in Sydney Street on very advantageous terms, the rent being moderate, and the premises being in every way most suitable for the purposes of the institution. With reference to the support the committee had already received in a pecuniary sense, they might state that it was by no means inconsiderable, although they had not endeavoured to do much in this direction, considering it best to establish the institution first, and not to bring the matter before the public or canvass actively for support until the establishment was practically on foot. They laid this statement before the meeting and the public generally with full confidence that the matter would receive that hearty support which an institution so urgently needed and so calculated to benefit the poor and suffering and assist the student in the practical knowledge of his profession, as the present, should receive from a community such as that of this city; and they trusted that the meeting would be able to express its satisfaction with the work already effected by the promoters, and give the Victoria Dental Hospital of Manchester the benefit of its favourable countenance and substantial support.

The Bishop of Salford said that any association which had for its object the supplying of the wants of the poorer portion of a large community like this, and relieving their suffering, was one worthy of assistance, but he had been a little taken aback since he came into the room by having placed in his hands a document headed "The Manchester Dental Hospital." He did not know whether there was an institution called the "Manchester Dental Hospital," whether it fulfilled the functions it undertook in a faithful manner, but certainly it had never come under his notice, and he thought it might be desirable to know in what position they stood. That institution was actually on foot; it was not an old established one, in fact it was only established in the month of July, in the year 1883, and, therefore, it had not a long-lived examination to undergo. However, it was in existence, and the first point in the constitution of its general laws was very similar to the point in the resolution he was about to move. When he was asked to take part in the movement, to assist which they had met, he looked for the names of persons who would be a guarantee to him to place his name upon the paper, and he did find the names of a number of friends, eminent men in their profession, which he felt to be a complete guarantee to him that he should be doing the proper thing in joining their ranks. There was one point, however, which struck him, and that was that the proposed Victoria Dental Hospital was to be in direct communication with the Victoria University and Owens College. There might have been an excellent effort intended some years ago, and one which they would not like to see fall through, but what they had to say was this, that it did not appear to have been an institution founded for the purpose of being connected with Owens College, and, therefore, that which they proposed to establish would be an institution connected with the highest institution of modern science in this part of the country. If it had the close support of that college and university he presumed that scarcely anyone would doubt but that it was wise to support those gentlemen who promoted such an institution because it would be imperfect unless it had something like skilled dental surgery. That was the definite difference claimed, the *raison d'être* which he did not find in the programme of the Manchester Dental Hospital.

A Voice: Read the last paragraph in the paper.

The Bishop read the paragraph as follows:—"The Manchester Dental Hospital will provide gratuitous relief for the poor, and serve as a clinical school for those students who may wish to attend Owens College for the dental lectures." Continuing, the bishop said that before committing himself irrevocably to a movement of this sort he should like to have the sense of the professors connected with Owens College, for there was something that wanted clearing up. His lordship then moved the following resolutions:—First, "that a dental hospital of the character described to this meeting is urgently needed to meet the the requirements of the poor and suffering inhabitants of this city and the surrounding district." Secondly, "That a dental hospital offering means for the practical instruction of students attending classes in Dentistry at the Owens College is much needed." Thirdly, "that the benevolent purposes and educational needs referred to in the previous resolutions will be met by the Victoria Dental Hospital of Manchester, and considers that the objects of the same are worthy of the support of the public, and pledges itself to further these objects and support the hospital in every legitimate way." As the resolution stood nothing could be more intelligible to him, but the question was—was there anything in the way, and if it be in the way could it be removed, or could they amalgamate the two societies? He hardly thought that in Manchester there was room for two large institutions, which might be opposed to each other. To him the proper thing would be to amalgamate.

Professor Gamgee, in seconding the resolution, said he wished to correct a misunderstanding. No hospital, as such, could be connected with the Victoria University. The support which they were about to give to the hospital about to be established must be given on general grounds. Six years ago the attention of Owens College was directed to the desirability of giving instruction to medical students, and he as the leader of that school drew up a report in which he expressed the opinion distinctly that there should be formal instruction given in Owens College. He pointed out that it could be done. He said that no system of dental instruction could be established on a satisfactory basis unless they were certain that there was a place outside where students could be taught in such matters, and receive a sound medical training. If there was anything done to bring about a system of dental instruction in Owens College, they must have the assurance that there would be proper means under which medical students could be taught by efficient doctors. He echoed the sentiments of the Bishop of Salford with regard to the scheme which had been brought before the citizens of

Manchester, and which had also received the support of the heads of the dental profession. When he mentioned such names as Mr. Campion, Mr. Shaw, Mr. Rogers, and others, who were supporting that movement, they would see at once that the practical teaching of dentistry would be carried on in such a way that it would be supplemented by the instruction given in Owens College. He disclaimed any idea of partisanship in the matter, and if there could be any *modus vivendi* which would clear the way he should be pleased to see an amalgamation of the two societies. He confessed, he must say, that the early history of the Manchester Dental Hospital was not a history which commended itself to him or which would commend itself to anyone who would investigate it. The names of the consulting physician and consulting surgeon had been placed on the list without their consent. He referred to Dr. Jones and Dr. Leech.

A gentleman in the room rose to a point of order. He denied Dr. Gamgee's assertion, and stated that the names of Drs. Jones and Leech had never been printed on the paper.

Dr. GAMGEE: They were communicated to me.

Dr. PARSONS SHAW spoke in support of the resolution, and read a letter from Dr. H. Campion, in which that gentleman cordially approved of the object of the meeting.

Dr. HEWITT said that the promoters of the new hospital did not come forward with any problematical scheme. The hospital was now established, and they simply asked those present to support the scheme submitted.

The CHAIRMAN announced that an amendment had been sent up to him which he could not accept as an amendment, but it might be moved afterwards as a substantive motion. The amendment was to the effect that in order to give confidence to any economical administration of the institution, the committee were requested to defer any appeal for subscriptions, and to appoint a meeting to confer with the committee of the Manchester Dental Hospital with the view of amalgamation.

Alderman WALMSLEY moved an amendment to the effect that the consideration of the subject brought before the meeting that day be referred to the committees of the two dental institutions which they knew were now in existence. He said that after what he had heard in that room and elsewhere he felt convinced that it would not be wise to force upon the public of Manchester two institutions which he must say were ill matured. With regard to the remarks of Dr. Gamgee he did not see in the printed list of names those names mentioned by the professor.

Professor GAMGEE, in explanation said he made no reference to the printed list.

Dr. Kinch said he had no confidence in an institution which was formed before it was submitted to the public for approval and assistance. With regard to the Manchester Dental Hospital during the six months it had been at work they had performed 827 operations, which showed at all events that some work had been done. Some gentleman had said that there was need for two dental hospitals but he should like to know in what town in England two such institutions existed. It would not be a pleasant sight to see two hospitals in rivalry, and it was enough to make one despair of philanthropic effort. He advocated amalgamation.

Dr. Burton and others defended the Manchester Dental Hospital and pointed out that the new hospital would be in the very next street to the one now at work.

Dr. Hardie moved the previous question, which was seconded by Dr. Ross.

Considerable feeling was displayed by the supporters of the two institutions. The Mayor and Bishop of Salford were compelled to leave, the chair being taken by Mr. S. Helm. After two hours and a quarter's discussion the chairman announced that the provisional committee of the new hospital would meet the committee of the Manchester Dental Hospital, to confer with a view to amalgamation, a statement that was received with loud applause.

The customary votes of thanks having been accorded the proceedings terminated.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN,

40, Leicester Square, W.C.

The next meeting of the above Society will take place on Monday, Feb. 4th., at 8 p.m.

Casual communications by Mr. G. W. Parkinson, Mr. Frederick Canton, Dr. W. St. George Elliott.

Introductory address by the President, Mr. J. S. Turner.

J. Howard Mummery, }
David Hepburn, } *Hon. Secs.*

APPOINTMENTS.

Mr. T. Vincent Cotterell, L.D.S., Hon. Dental Surgeon to St. Bartholomew's Hospital, Rochester, has been appointed Hon. Dental Surgeon to the Children's Hospital, Paddington Green, W.

Mr. Morton Smale, M.R.C.S., L.D.S., has been appointed medical tutor to the Dental Hospital of London, *vice* Mr. T. F. R. Underwood, resigned.

BENEVOLENT FUND OF THE BRITISH DENTAL ASSOCIATION.

Donations and Annual Subscriptions up to January 29th, 1884.

Those marked with an *a* have been already received.

	Donations.			Ann. Subs.		
*a*Ashworth, H., Manchester	£0	5	0	£0	10	0
Ash, Claudius and Sons, London	52	10	0	5	5	0
*a*Bacon, W. B., Tunbridge Wells		—		1	1	0
Baines, A., Hanley	5	5	0	1	1	0
*a*Bangham, C. G.	1	1	0		—	
*a*Bartlett, Ed., 38, Connaught Square, W.	3	3	0	1	1	0
*a*Barton, W., Eastbourne		—		1	1	0
*a*Bayfield, C. M., Talbot Road		—		1	1	0
*a*Beavis, Geo., Newport	1	1	0	0	10	6
*a*Betts, E. G., Tufnell Park	5	5	0	1	1	0
Blandy, H., Nottingham	1	1	0	1	1	0
*a*Bradshaw, Richard, 46, Gt. Marlborough Street, W.	1	1	0	1	1	0
*a*Brown, Chodwick, Upper Street, N.		—		1	1	0
Brown, James, Cheshire	2	2	0	1	1	0
*a*Brown, Wm., Stratford-on-Avon	0	10	6	0	10	6
Browne Mason, J. T., Exeter	5	5	0	1	1	0
*a*Brunton, Geo., Leeds	5	5	0	1	1	0
*a*Cameron, Donald R., Glasgow		—		0	10	6
*a*Campbell, W., Dundee	5	5	0	1	1	0
*a*Campion, Henry, Manchester	10	10	0	1	1	0
*a*Canton, F., Great Marlborough Street	2	2	0	0	10	6
Clark, J. A., 48, The Broadway, E.		—		0	10	6
*a*Clarke, Thomas M., Richmond, Surrey		—		1	1	0
*a*Cockings, W. S., Louth	1	0	0	1	0	0
*a*Coffin, W. H., 94, Cornwall Gar., S.W.	1	1	0		—	
*a*Cole, J. Fenn, Ipswich	5	5	0	1	1	0
*a*Coleman, A., Streatham	5	5	0	1	1	0
*a*Coles, Oakley, Wimpole Street	5	5	0	1	1	0
*a*Colyer, James, 253, Brixton Road, S.W.		—		1	1	0
*a*Cormack, D., Margaret Street	2	2	0	1	1	0
*a*Crapper, J. T., Hanley	10	10	0		—	
*a*Crombie, P., Aberdeen	3	3	0		—	
*a*Cronin, A., Holles Street	5	5	0	1	1	0
*a*Curtis, Dr., 93, Piazza di Spagna, Rome		—		1	1	0
*a*Dennant, J., Brighton	5	5	0	1	1	0
Dilcock, T., Liverpool	5	0	0		—	
Dopson, D., Liverpool	2	2	0	0	10	6
*a*Douston, W., Tottenham	0	10	6	0	10	6
*a*Dunn, Charles W., Florence	10	0	0	2(5 yr.)		

	Donations.	Ann. Subs.
*a*Evans, Henry, Tenby	—	0 10 6
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*a*Fawssett, W., Cambridge	3 3 0	2 2 0
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*a*Fletcher, D. and D. J. G., Australia	2 2 0	2 2 0
Foran, J. C., Eastbourne	—	1 1 0
*a*Forsyth, F., George Street	5 5 0	—
*a*Fothergill, Edward	—	2 2 0
*a*Fox, Ernest W.	—	0 10 6
*a*Fox, Walter H.	—	0 10 6
*a*Gabell, A., Red Hill	2 2 0	0 10 6
*a*Gartley, J. A., Sackville Street	2 2 0	1 1 0
*a*Gibbings, Ashley, Stratford Place	5 5 0	1 1 0
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*a*Harding, T. H. G., Park Square East	5 5 0	—
*a*Harding, W. E., Shrewsbury	5 5 0	2 2 0
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Hatch, R. M., Bristol	—	0 10 0
*a*Hedgeland, J. Henry	—	1 1 0
*a*Henry, Geo.	2 2 0	1 1 0
Hill, A., Henrietta Street	5 5 0	1 1 0
*a*Hockley, A. G., Great Marlborough St.	5 5 0	1 1 0
Hogue, Dr. D. M., Edinburgh	5 0 0	1 0 0
*a*Holland, J., Sloane Street	5 5 0	1 1 0
*a*Hutchinson, S. J., Brook Street	5 5 0	1 1 0
*a*Imrie, Wm., Paris	5 5 0	1 1 0
*a*Jordon, H. W., 10, Princes Street, W.	3 3 0	—
Key, W. H., Rhyl	0 10 6	0 10 6
King, Roff, Shrewsbury	2 2 0	1 1 0
*a*King, R. F. H., Newark-on-Trent	—	1 1 0
*a*King, T. E., York	5 0 0	1 0 0
*a*Kluht, H. J., 44, Norfolk Terrace, W.	—	1 1 0
*a*Knowles. J. H., Reading	1 1 0	—
*a*Lee, William, Norwich	0 10 0	0 10 0
Levason, A. G., Hereford	5 0 0	1 1 0
*a*Lloyd, J. W., Liverpool	—	1 1 0
*a*Lockett, Frederick, Kingston-on-Thames	0 10 0	0 10 6
*a*Longhurst, H. B., Old Burlington St.	5 0 0	0 10 0
*a*Longhurst, Sidney, Old Burlington St.	5 0 0	0 10 0
*a*Lucas, Joseph, Birmingham	1 0 0	—
*a*Lukyn, Edward, 63, New Broad St., E.C.	—	2 2 0
Macgregor, M., Edinburgh	5 5 0	1 1 0
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	Donations.	Ann. Subs.
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*a*Morrison, R. P., Barnstaple	—	1 1 0
*a*Mummery, J. R.	—	1 1 0
*a*Murphy, T., Bolton	5 5 0	1 1 0
*a*Naylor, James C., Ilkley, Leeds	—	1 1 0
*a*Nicol, W. H., Clarendon Road, Leeds	5 5 0	0 10 6
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*a*Parkinson, James, Sackville Street	—	1 1 0
*a*Parson, T. Cooke, Clifton	25 0 0	2 0 0
*a*Partridge, H. F., Sussex Place, S.W.	—	1 1 0
*a*Pearman, G. B., Torquay	2 2 0	1 1 0
Pidgeon, W. J., Leeds	—	1 1 0
*a*Pitowsky, A., Barnstaple	5 5 0	1 1 0
*a*Quinby, H. C., Liverpool	10 10 0	1 1 0
Renshaw, J., Rochdale	5 5 0	1 1 0
*a*Robbins, Cornelius, Kilburn, N.W.	1 1 0	1 1 0
Robertson, J. L., Cheltenham	1 1 0	1 1 0
*a*Rogers, Richard, Cheltenham	25 0 0	2 2 0
*a*Rose, F., Liverpool	1 1 0	1 1 0
Rutterford, G. W., London	10 10 0	—
Rymer & Steele, Croydon	5 5 0	2 2 0
*a*Saunders, Sir Edwin, George Street	21 0 0	2 2 0
Scales, H. F., Kendal	—	1 1 0
*a*Sexton, T., Stanhope Street	1 1 0	0 10 6
*a*Shillinglaw, W., Birkenhead	1 1 0	0 10 0
Sims, C., Birmingham	—	1 1 0
Smale Bros., London	10 10 0	—
*a*Smale, M.A.	—	1 1 0
Smith, Dr. Jno., Edinburgh	5 0 0	1 1 0
Smyth, A., Glasgow	5 5 0	1 1 0
*a*Street, G. H.	—	1 1 0
Stewart, R. E., Liverpool	5 5 0	1 1 0
*a*Sutherland, Benjamin, Glasgow	—	0 10 0
Swanson, A. J., Cheapside	1 1 0	0 10 6
*a*Tippett, J. C., Torquay	2 0 0	1 0 0
Tomes, C. S.	10 10 0	1 1 0
*a*Tomes, J., Caterham	10 10 0	2 2 0
*a*Trippier, Thos., Liverpool	—	0 10 0
Turnbull, R. A., Newcastle-on-Tyne	—	0 10 6
*a*Turner, Jas. Smith, George Street	5 5 0	1 1 0
"Turner," M., Glasgow	5 5 0	1 1 0
*a*Vanderpant, F. J., Kingston-on-Thames	5 5 0	1 1 0
Waite, W. H., Liverpool (*a*£50)	100 0 0	2 2 0
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	Donations.	Ann. Subs.
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*a*Weston, Charles, Ventnor	—	0 10 6
*a*West, C., Finsbury Square	—	1 1 0
White, G. W., Newport	—	1 1 0
*a*White, Richard, Norwich	5 5 0	1 1 0
*a*Williams, W. Caleb, Leamington	2 2 0	1 1 0
*a*Williamson, Dr., Aberdeen	5 5 0	1 1 0
*a*Willows, Charles, Clifton, Bristol	2 2 0	—
*a*Wilson, A. (conditional)	5 0 0	1 0 0
*a*Woodburn, W. S., Glasgow	5 5 0	1 1 0
*a*Woodhouse, A. J., Hanover Square	21 0 0	2 2 0
*a*Woodhouse, R. H., Hanover Square	5 5 0	1 1 0
*a*Woodhouse, W. H., 1, Hanover Sq. W.	5 5 0	1 1 0
*a*Youngman, F., Torquay	2 2 0	1 1 0
Crombie, P., Aberdeen, also promises	—	1 1 0
Knowles, J. H., Reading „	—	0 10 6

The total amount of donations and subscriptions promised and in part received up to January 29th, 1884, is £792 19s., being £647 0s. 6d. donations, and £145 18s. 6d. annual subscriptions.

Oakley Coles, *Hon. Sec.*
Alfred Woodhouse, *Hon. Treasurer.*

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

The Third Ordinary Meeting of Session 1883-84 was held on Jan. 10th, in the Rooms, 30, Chambers Street—Andrew Wilson, Esq,, L.D.S.Ed. (President), in the chair.

The minutes of previous meeting having been read, were approved.

The paper by Dr. Kingsley of New York, Honorary Member of the Society, on "Judicious and Injudicious Extraction" was then discussed.

Mr. Rees Price opened the discussion with a few words on the order of eruption of the permanent teeth, remarking that he thought most members would agree with the order given in Dr. Kingsley's paper, in preference to that mentioned by Dr. Clowes. He agreed also with Dr. Kingsley in calling in question the statement that deciduous teeth should be removed when the time had arrived for their permanent successors to erupt. It was a common thing to see loose temporary teeth, and pieces of these, causing the immediate permanent tooth to erupt irregularly. The relation between the process of eruption of a permanent tooth, and that of the absorption of the temporary tooth, was a very leosc one. When, therefore, a deciduous tooth appeared firm, and with no signs of its successor, one was not justified in extracting it. Much less so, then, in the case of temporary teeth, simply because their successors were due.

With reference to the extraction of the deciduous canines, Dr. Kingsley was very emphatic against so doing, and equally so Mr. Coleman, and yet, as had been recently pointed out, the question was one in which it was often difficult to decide. For himself, and he now spoke with special reference to the lower jaw, he was at times in doubt whether he was doing best for the patient in retaining the deciduous canines where the permanent incisors were very irregular. He was fully aware, in many instances, if the teeth were let alone that the irregularity did seem to right itself as the patient grew older. But in cases where one of the incisors was twisted or standing behind another, and within the arch, was it possible for the tongue and lips to do much? The usual plan was to leave such irregularity till a later period, and then to regulate with a plate (not easily done), or preferably to extract one of the incisors. He ventured to think that this treatment did not promote regularity, though it might to some extent do away with overcrowding. To him it had been a great satisfaction to read the remarks of Mr. Woodhouse at the Plymouth meeting of the British Dental Association. This gentleman had stated that in many instances the deciduous canines in the lower jaw could be extracted with considerable advantage to the patient. The opinion was founded upon an experience of some thirty years, under exceptionally favourable facilities for observation and treatment, and was thus entitled to great consideration.

He would ask, what was the objection to extracting the deciduous cuspids? Was it not due to the tendency of teeth to approximate over a space during the stage of eruption? Thus (in the event of extracting the temporary canines) the lateral incisor and the first bicuspid would appear more or less in contact, the cuspid appearing outside the arch. If these teeth did approximate, he would take out the six year old if incapable of being preserved, and allow the bicuspids to fall back, or preferably extract thefirst bicus pid.

The question seemed to be, were we justified in removing the temporary canines in cases of twisted or overlapping incisors of the lower jaw, where mechanical treatment was difficult at the usual age for regulating? On the one hand there was its strong condemnation by Dr. Kingsley and others, but on the other side a peculiar experience of the benefits to be derived from this treatment.

The last matter to which he wished to call attention was the remarks of Dr. Kingsley, as to which teeth should be extracted in irregularities. That where the canines were outside the arch, it was generally preferable to extract the first biscupid he quite agreed. If the six year old molar had to go it was not because it was the best tooth to extract, but because it was bad in itself, *i.e.*, decayed beyond filling.

Many dental surgeons still hold that owing to its greater tendency to decay, the six year old molar should be extracted; with this he could not agree. He would ask how far want of cleanliness (which was common in patients from six years to fifteen years) was a factor in this tendency. He had seen many cases where not only the six year old molars, but the centrals and laterals were decayed at an early age, due he had no doubt, in great measure to this cause.

Then it should be remembered that with the scientific treatment of to-day, good serviceable teeth can be made of decayed six year old molars.

Another reason which had lately been advanced for the extraction of the six year old molar, was that crowding often took place from behind on the eruption of the third molars. And by removing the first molars in preference to bicuspids, allowance would be made for anterior and posterior crowding if the latter should occur. He could instance three mouths were the four bicuspids were removed for overcrowding, and in each case the third molars had erupted without trouble and normal in size. It might also, he thought, be remembered that the third molars were frequently diminutive in size, or did not erupt. Were we then justified in suiting the treatment to conditions which might possibly never arise?

Mr. Stirling, Ayr, said: I have not very much to say, as I agree nearly with what Dr. Kingsley says on the subject. There seems to be a very prevalent opinion that the premature extraction of the temporary teeth will cause contraction of the jaw, or at least of the alveolar process. I do not know any good reason that has ever been given for that opinion, but I suppose those who adhere to it believe that the presence of the temporary teeth in the jaw does in some way influence the growing of the alveolar process outward and forward. When speaking of contraction of the jaw, I suppose they mean, not *contraction*, because that is not the word for it, but a deficiency of forward and outward growth, or contracted, compared to what it would have been, if the temporary teeth had not been extracted. There might have been some truth in that, if the permanent teeth erupted and took position just in the places previously occupied by the temporary ones, but they do not; the permanent teeth, while growing, make alveoli for themselves, and do not grow into the alveoli of the temporary teeth. As regards the extraction of the temporary canine tooth, if we remember that in the jaw of a child of six years old, we have the crowns of the permanent lateral incisors and biscupids near to each other, and the canine teeth, not between them, but lower down (in the lower jaw) and more forward. Now when the first bicuspids are erupted just after the lateral incisors, it is reasonable to expect that we would have them rather too close together if we had not the temporary canine tooth in place to keep them separated. There is one condition, however, under which I would extract even the temporary canine teeth, and that is where the permanent lateral incisors erupt behind them, in the upper jaw, and inside the occlusion of the lower front teeth. In that case I think it better to extract the temporary canines and push the laterals out into place at once, than to wait for the eruption of the permanent canine teeth, when the regulating of the laterals would be certainly more difficult.

Mr. MACLEOD said: The order of shedding the temporary teeth, as described by Dr. Kingsley, is the one which is most consistent with the usual course of Nature as observed on this side of the Atlantic. That one formulated by Dr. Clowes is a new departure, which has not yet been imported into this country, or at least has not been recognised by any members of our profession who move amongst us as "takin' notes and straightway prent them." I need not therefore take up any time in going over this order, but simply content myself with generally endorsing Dr. Kingsley's views on this particular point.

(To be continued.)

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

TO THE DENTAL PROFESSION.

To the Editor of the "British Journal of Dental Science."

SIR,—Subscriptions are earnestly requested on behalf of Edward H. Lynne, late of Swansea.

This gentleman having been advised by his physician to go to New Zealand, sold his practice, but on arriving at his destination was robbed of his stock-in-trade,—dental tools, teeth, and money,—and had to return to England destitute. Since then his health has gradually failed, and he and his wife (who is paralysed and imbecile) are reduced to the utmost destitution, and are urgently in need of assistance. Subscriptions will be received by Mr. E. Wilmot, 191, Victoria Park Road, South Hackney, E.; C. Ash and Sons, Broad Street, Golden Square, W.; G. W. Rutterford, 11, Poland Street, W.

Messrs. Ash and Sons	£1 1 0
G. W. Rutterford	1 1 0
Dr. Richardson	1 1 0

Mr. E. Wilmot, *Surgeon Dentist.*

191, Victoria Park Road, South Hackney, E.

[To Mr. Wilmot's letter we append an extract from the Dunedin "Penny Post."—Ed.]

"On the 26th of October, 1878, Mr. E. H. Lynne, a surgeon-dentist, arrived at Port Chalmers from London by the ship "Calypso." The goods, consisting of nine boxes, were left at the Dunedin railway-station, and Mr. Lynne received a ticket from one of the station clerks. On the following day Mr. Lynne called at the railway station and demanded his boxes; one of the boxes was missing. The box could not be found, and Mr. Lynne was told to call the next day. He called continually, but the missing box could not be discovered. Now, unfortunately, this box contained the whole of the stock-in-trade necessary for Mr. Lynne to commence business as a dentist, consisting of a large collection of valuable surgical instruments, gold plates, &c., besides £150 in gold and silver coin; the total value amounting to about £400. Mr. Lynne has twice petitioned Parliament, but can obtain no redress."

REPORT OF CASES TREATED AT THE ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.

From January to December, 1883.

Teeth Extracted	572
Stoppings	17
Advice Cases and Scaling	140
Irregularities of the Teeth treated mechanically	11
Removal of a Venous Angioma	1
Total	741

W. H. Kirton, L.D.S., R.C.S.Irel., *Honorary Dental Surgeon.*

Communications have been received from Messrs. Oakley Coles (London), Dr. J. Taft (Michigan), J. R. Gray (New Zealand), Dr. Alf. Quinet (Brussels), J. W. Roberts (Dudley), Geo. Cunningham (Cambridge), E. Wilmot (London), W. H. Kirton (Southsea), T. G. Bowick (Bedford).

BOOKS AND PAPERS RECEIVED.

"Syllabus of Institut Odontotechnique de France," "Lancet," "British Medical Journal," "Dental Cosmos," "Revue Odontologique," "Deutsche Monatsschrift für Zahnheilkunde," "The Western News," "Pharmaceutical Journal," "Chemist and Druggist," "Southern Dental Journal," "Dental Advertiser," "Items of Interest," "Caulk's Dental Annual," "American Journal of Dental Science," "New England Journal of Dentistry," "Journal of British Dental Association," "Founding of the Dental Hospital of Dublin by John O'Duffy, L.D.S.," "L'Odontologie," "Longman's Magazine."

British Journal of Dental Science.

No. 386. LONDON, FEBRUARY 15, 1884. Vol. XXVII.

THE EXPERIMENTAL STUDY OF ANÆSTHETICS.—III.

By Dudley W. Buxton, M.D., B.S., M.R.C.P.

In a former paper we considered the method which M. Paul Bert has adopted, and we attempted to show that it possessed indubitable advantages over the commonest plans in vogue for the administration of nitrous oxide. It was indicated that this method consisted virtually in causing the patient to breathe in a mixture of nitrous oxide and oxygen, but under an increased pressure: it now remains for us to describe how this end is achieved.

Firstly, we have the pneumatic chamber—devised mainly by Dr. Fontaine—an air-chamber constructed of cast iron, and of a strength sufficient to resist the pressure of two atmospheres.

Light is admitted from above by thick panes of glass, which are let into cast iron frames. The doors which permit of egress open from within. At the sides a well-guarded trap opens, allowing of the introduction of any instrument or other essential for the operation.

The operating table is placed in the centre of the chamber, and has a reservoir beneath it which allows of the accumulation of the mixture of gases, which gain entrance by a carefully valved pipe, communicating with the reservoir without.

This chamber can be varied as to size: either to be useful for private houses, when it is constructed to run upon wheels, or for hospital purposes. Dr. Fontaine has constructed one capable of containing 300 persons.

In direct communication with this chamber is an air condenser hermetically in gear with it. This most ingenious contrivance consists essentially of a cylinder filled to a certain point with water. Resting upon this water level is a float, which balances a valve, so constructed that, as the water line rises in column, the water-way conduit is closed; when the water line falls, the conduit permits the entrance of a fresh supply of water. This maintains a fairly constant pressure of water, and so controls the pressure of air in the cylinder. Now, as this air is pumped by the water pressure into the chamber, it is possible to regulate the barometric pressure at will. The mixture of gasses, at a pressure of about ten atmospheres, is conducted to the bag in the chamber and carried by a tube, which ends in a caoutchouc face-piece. This face-piece is so valved that expired air forces its way out, and inspired air traverses only when the face-piece is removed.

In summer the ingoing air is cooled, in winter it is warmed. Specially contrived ventilators permit of the removal of effete matters, while no ingress of air is permitted save by the pipes communicating with the condenser.

In this chamber the patient is placed, and the operator with his assistants range themselves, after having made all their preparations. The required pressure is then obtained, and the administration of the mixture of gases commences.

The theory of M. Paul Bert's method commends itself more than the practice, as, although the cabinet might well be adopted for hospital use, it could not, in its present guise, be used by Dentists without a serious outlay, added to this the mixture of gases is another item of expense, and one of no mean proportion.

Having glanced at the recent experiments with nitrous oxide, we pass on to those which have occupied the physiologists, and especially in France, and which have been undertaken with the view of lessening the risks entailed in inducing chloroform narcosis.

The symptoms incident to the development of chloroform narcosis are too familiar to require any comment from us, we would, however, draw attention to those which prove so troublesome in a large number of cases. The struggling, shouting, and fury which are provoked during the "excitement stage," form one of the greatest drawbacks to the use of the alcohol derivatives, and one which experimenters have long sought to combat. Clover, in his experiments made many years back, was wont to employ the vapour of chloroform largely diluted by air. Paul Bert has employed the same method, but the vapour density of chloroform has proved so far a great difficulty, it being next to impossible with the means at our disposal to obtain an equally constituted mixture. Paul Bert has undertaken various researches to overcome this difficulty, but the reservoirs requisite are so bulky as to be nearly prohibitory outside the physiological laboratory.

Dr. Peyraud, a surgeon of Libourne, has employed the so called "dosimetric method" for some months, and in presenting his results before the Société de Biologie states that his success has been complete. His mode of action is simplicity itself, and deserves careful attention and testing.

The patient has his face covered lightly by a thin compress; upon this *one drop* of chloroform is dropped. The respiratory cycles are carefully watched, and at the end of the first expiration after the commencement of narcotisation another drop is allowed to fall upon the compress. This is repeated, care being taken that the drop only falls at the end of expiration. Complete insensibility is said to supervene in from seven to ten minutes. Throughout the whole of the administration there is no change in the pulse, the respirations remain natural, the patient experiences no discomfort and evinces none of the frenzied struggles which occur with the full doses of this drug. The narcosis simulates sleep in all respects save that there is absolute insensibility. Patients are said to experience a pleasurable feeling and are ready to undergo the process again and again. When complete insensibility has been attained Dr. Peyraud states that four drops of chloroform per minute will suffice to maintain the patient completely anæsthetic.

In support of Dr. Peyraud's method, M. Paul Bert cites a striking case in point. An elderly woman, for whom removal of the breast had become necessary, was placed upon the operating table, and chloroform was administered by the usual method of "massive doses." The woman became extremely violent and exhausted herself by struggling, and in no way became anæsthetic, indeed her state appears to have been one of hyperæsthesia. This patient, upon a subsequent day, was treated by Dr. Peyraud's plan, and went off tranquilly and easily, the operation being brought to a successful issue.

Should this simple contrivance, which reminds one of that advocated a short time since by Dr. Coates, prove, upon more extended trial, worthy of the high praise accorded to it by its sponsor, M. Paul Bert, it will furnish us with a very valuable adjunct to the methods already in the field.

The advocates of this method further assert that vomiting, retching, and hiccough, do not occur at the time of the administration, and as after effects are much less marked than is usual. In operations about the eye, in ovariotomies, &c., when the occurrence of vomiting adds so greatly to the gravity of the state of the patient, any plan which banishes nausea or mitigates its violence, must present most favourable comparison with either chloroform or ether, at least as usually administered.

Passing on to other plans which have been suggested as likely to minimise the evils which chloroform entails when given alone, we have to consider that recommended by Dr. Aubert.

Dr. Aubert, senior surgeon at Antiquaille, employs a mixture of morphia and atropia, according to the following formula: hydrochlor. of morphia, 10 centigrammes; sulphate of atropia, 5 milligrammes; distilled water, 10 grammes. A Pravaz syringe full of this mixture is injected from 20 to 30 minutes before the chloroforming is started. The quantity injected amounts to one and a half grammes, and contains one and a half centigrammes of morphia (= about $\frac{1}{4}$ grain), and ·3 of a milligram. of atropia (= about $\frac{1}{200}$ grn.). Dr. Aubert uses one gramme for children. In reviewing his results in sixty cases, he states he has found his patients pass into insensibility with but little excitement—*they sleep*—they remain profoundly anæsthetic with but small doses of chloroform, and do not suffer any symptoms of atropinism.

MM. Gayer, Leon Tripier, of Lyon, and MM. Verneuil and Horteloup, have used this method during their operations and have found it to fully answer all their requirement. M. Gayer employed it especially in his operation upon the eye.

Not only is it believed by its employers that this method is absolutely safe, no symptom causing the least anxiety having occurred, but it is rapid in its application, ensures absolute calm, and is productive of a sleep from which the patient is rapidly aroused. Thus in

Four cases,	sleep	supervened in .	. 1	minute
Five	,,	,, .	. 1·5	,,
Twelve	,,	,, .	. 2	,,
Six	,,	,, .	. 2·5	,,
Four	,,	,, .	. 3	,,
Two	,,	,, .	. 4	,,
Four	,,	,, .	. 5	,,
One	,,	,, .	. 6	,,
One	,,	,, .	. 7	,,
One	,,	,, .	. 10	,,

It will be remembered that Dr. Harley, writing in the "British Med. Journal" (1868), suggested the use of atropia in cases of heart failure, and many have employed it in combination with morphia.

Cases of severe lung trouble—cases of advanced heart disease, and cases of severe renal affection, have all been treated with this method, and we have Dr. Aubert's affirmation that in all alike it answered perfectly, and no ill consequences ensued.

A complete immunity from the loud mucus-râles which betoken laryngeal and bronchial irritation as well as complete suppression of saliva, probably due to the atropia, mark this mode of anæsthetizing. The excitement stage is very short and transient, and there are no unpleasant after effects. These are the advantages claimed by Dr. Aubert.

Gréhaut and Quinquand, in advocating Bert's method of mixing chloroform vapour with air state that, in their experience, a mixture of ten grammes of chloroform to one hundred litres of air produce a most satisfactory anæsthesia.

The epitome of recent experiments which we have given above can hardly be taken as affording enough evidence for generalisations of any practical service. It seems clear, however, that chloroform possesses very complex actions upon the human economy, actions which will have to be disentangled and studied one by one before we can hope to arrive at any satisfactory solution of the problem—what is the physiological action of chloroform. It would appear that we may hope to find a method which will enable us either to employ dilute doses or counteract toxic effects; but at present it can hardly be said such a method exists. All, at present, is more or less tentative; our evidence is fragmentary; our deductions open to cavil. Of one thing there is no uncertainty—that our present methods are clumsy and unscientific; that in their adoption we risk the welfare of our patient, and by shutting our eyes to their imperfection we close the door on useful research and a line of physiological discovery likely to produce vast stores of information such as will prove of immense service to the whole human race.

DEATH OF DR. VALETIN LEOPOLD TAUZER.—On Thursday, the 27th day of September, 1883, Dr. Valetin Tauzer died of heart disease. He held the position of Professor of Dentistry at the Carl Frauzens University at Graz, Member of College of Physicians, Vienna, and Corresponding Member of the Royal Geological Society in Vienna. He was born in 1824 at Stein, in Kroin, became Doctor of Medicine and Surgery in 1854. From 1857 to 1865 he was physician in Thrapnia-Töplitz, in Kroatien. From this time he interested himself in Dentistry. In 1865 he went to Graz as Dentist, and in 1866 became a Professor at the University. He published some essays on Dentistry in the German Quarterly, and showed lately some zeal for the introduction of iodine (iodoform) in our practice. He leaves a widow; four daughters, two of whom are married; two sons, the elder, having studied as a Dentist at Philadelphia, had returned to assist his father in his practice. The Dentists of Graz, as a token of respect, laid a wreath of flowers on the coffin.

CASE OF UNILATERAL HYPERTROPHY OF THE FACE.

By Dr. Schieck, of Döbela.

The cases hitherto recorded of unilateral hypertrophy of the face, apparently due to disease of the trophic nerves are so few in number, that some interest should attach to the following briefly described instance of this affection.

The short account given by Dr. Ziehl in Virchow's Archives was based on four cases besides his own, to which may be added one recorded by Flüter (Grundriss der Chirurgie), ours therefore makes the seventh.

Elizabeth J., aged nine, is descended from a healthy family in which no nervous affections or malformations of any kind have ever been noticed. At birth the child is said not to have presented any abnormal appearance; towards the end of the second year, a general swelling of the left cheek and lower lip was noticed which went on constantly increasing in size, the teeth in the upper jaw meanwhile not making their appearance. The parents cannot find any cause for this, more especially as nothing unusual was noticed by the mother during her pregnancy. The child is stated by her teacher to be somewhat backward, and of a very sluggish mental disposition.

The present condition is as follows: the soft parts of the left cheek and upper lip, and in a small measure also those of the left lower lid are hypertrophied, and the left ala nasi is comparatively somewhat thicker than the right. The nose is shaped like a saddle with the lower portion pushed over to the right. The hollow between the ridge of the nose and the cheek is less marked on the left side than on the right. The commissure of the upper lip seems, in consequence of the thickening of the latter, to be forced over to the right. The left upper lip itself hangs so low, that it crosses the lower lip and entirely covers the left half. All the hypertrophied parts feel soft to the touch and show no trace of œdema. The left cheek may possibly be a little redder than the right, but the development of the hair is very much more marked on the left upper lip. The sensibility and motility of the affected parts are quite normal, the secretion of the sweat and sebaceous glands is not increased. Of the bones of the face, the molar, the body of the superior maxilla but especially its alveolar process are much more developed on the left side than on the right. The left upper maxilla contains no other teeth beyond the two incisors, the canine and one molar, in its other parts the alveolar border is altogether covered by the gums. The lower jaw shows no signs of any abnormality, the tongue and left tonsil also are not hypertrophied on either side; the left ear and left half of the forehead are quite normal. The growth of hair is the same on both sides of the head. The pupils are equally dilated.

COMPARATIVE DENTAL PATHOLOGY.

By John Bland Sutton,

LECTURER ON COMPARATIVE ANATOMY, &c., MIDDLESEX HOSPITAL MEDICAL COLLEGE, LONDON.

Contents.—1. Introduction; 2. Malformations; 3. Abnormalities of growth; 4. Constitutional diseases affecting the teeth; 5. Diseases of the teeth; 6. Fracture of teeth; 7. Parasites; 8. Foreign bodies in teeth; 9. Summary; 10. Bibliography.

INTRODUCTION.

Scattered chiefly among anatomical literature, are numerous cases illustrating diseases of the dental tissues in animals, of no small importance and value. Aware of the interest this Society has shown in these matters, I deemed it would be profitable labour to collect all recorded cases of "diseases of the teeth in animals," and add to these a notice of some instances of more than ordinary departure from the normal condition of teeth of certain wild animals which have come under my observation, and place them before the Society in a collected form, arranged in such a manner as our present limited knowledge of the subject admits.

My first intention was to include "malformation and diseases of the jaws," but this embraced a field of greater extent than could be consistently dealt with in one evening. I therefore contented myself with treating of the malformations and diseases of the dental armature alone, leaving the jaws to form the subject of a future communication.

It is satisfactory to note that, though I have searched far and wide, one of the most fruitful places for papers on Comparative Dental Pathology has been the Transactions of this Society; I would refer particularly to the papers of Professor Flower, Dr. Murie, and Mr. Tomes. Dr. Magitot's "Traité des Anomalies du Système Dentaire" furnished some good material; other matter has been gleaned from the most varied sources. At the end of this work, in the form of a bibliography, care has been taken to note in all instances the place of record and the recorder of the case or cases referred to.

In classifying the diseases it seems most satisfactory to arrange them in the following order:—

1. Malformations, including under this term abnormalities of number, shape, size, and situation.
2. Abnormalities of growth. This treats of hypertrophy, atrophy, arrested and aberrant growth.
3. Constitutional diseases affecting the teeth, such as mollities ossium and rickets.
4. Diseases of the teeth. This will comprise caries, erosion, inflammation of the pulp, alveolar abscess, and odontomes.
5. Fracture.
6. Parasites attacking teeth.
7. Foreign bodies in teeth.

Under one or other of these headings will be arranged all affections of the teeth of animals, from whatsoever cause arising. It seemed to me better to make my divisions as comprehensive as possible, rather than to split the subject into many minor subdivisions, as is so customary with the majority of authors writing on special matters. It is preferable to err on the side of limited division, than to create a host of minor classes of affections, which are admirably suited to perplex and worry the reader. The order followed is nearly the same as that observed in Tomes' "System of Dental Surgery," second edition.

(*To be continued.*)

ON THE RELATIONS BETWEEN DENTAL LESIONS AND DISEASES OF THE EYE.

By Henry Power, M.B.Lond., F.R.C.S.,
OPHTHALMIC SURGEON AT ST. BARTHOLOMEW'S HOSPITAL, AND SURGEON TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, ETC.

(*Concluded from p.* 103.)

It is but right to add, however, that Priestley Smith has made a series of tonometrical experiments at the Dental Hospital in a series of cases of toothache. The results he obtained were not very decisive, though he arrived at the conclusion that in young persons toothache rarely, if ever, causes a decided rise of tension. He estimated the tension in sixteen persons suffering at the moment or recently from severe pains in the teeth, and found on the whole little or no appreciable difference.

The writing of this paper has recalled to my memory various cases which were in the highest degree suggestive of the teeth being the starting-point of the trouble, and to which I regret extremely I did not direct a larger amount of care and attention at a period when it might have proved of service. To give one only :—

Mrs. S., aged thirty-two, a stout, ruddy-complexioned woman, suffered in 1878 and 1879 from coloured haloes round lights, and the general symptoms threatening glaucoma. For these there was no apparent cause. She was healthy, in easy circumstances, and her habit of body and general manner of life were thoroughly normal and good. She, however, suffered severely from toothache. A particular tooth would begin to ache, without apparent decay of the crown. After enduring the pain for some time she would have the tooth extracted, and an abscess was always found to exist at the root. In March, 1880, after a fall which intensified all the symptoms, an iridectomy was performed on the left eye. The wound did not heal kindly, and a cystoid cicatrix was the result. The vision gradually deteriorated, and ultimately was entirely lost. She now had two miscarriages, and some circumstances occurred in the family causing her much mental distress and depression of spirits, with frequent shedding of tears. I saw her first about eighteen months after the operation had been done.

The right eye was now the seat of trouble, but the vision was still very good, and with appropriate glasses (x 1 D) could be rendered perfect. Three weeks previously she had awaked with violent pain, which lasted for three days; she saw bright lights, and the eye was hard, and the optic disk was white and cupped. She was told she had glaucoma, and that if the vision deteriorated she must submit to an operation. It did deteriorate rapidly, and I performed an iridectomy in the hope of saving vision, but the wound passed through the same stages as with the previous operation, and the cystoid cicatrix was formed with persistent high tension of the globe of the eye. I saw her only a few days ago with complete blindness of the left eye, and only perception of very bright light in the right eye. She again repeated to me the story of the teeth, and I could not but think that if a similar case appeared before me now, instead of trying iridectomy—which was here a signal failure, even when performed by two different operators, and which resisted eserine, and all the usual methods of reducing tension—I should at once have every tooth carefully and thoroughly inspected by an experienced dental surgeon. And I would ask whether such a case is not adapted for the removal and replantation of teeth, if these, after extraction, were found to be sound.

I fear, Mr. President and Gentlemen, that I have wearied you with cases, but I trust I may stand excused when I say that most of these cases are germane to the matter, and that my object has been in part to draw the attention of some amongst you who may not have given it a thought, to the close relationship which exists between the teeth and the eye, different as these organs are in their mode of development, their histological characters, and physiological uses, and in part to elicit from you some information that may prove of service to the ophthalmic surgeon, and may afford him some hints of the kinds of disease of the teeth, which he is likely to overlook, and which it is important that he should recognise.

In conclusion, then, I think it may be laid down as a maxim to be generally observed that in all cases of threatening glaucoma, especially when this is associated with ciliary neurosis and obscure pains in the temples and maxillary orbital regions—in all cases of mydriasis, and probably of myosis, originating without apparent causes—in all cases of sudden paralysis of either of the orbital muscles, or of loss of sensation in the absence of cerebral symptoms—in all cases of phlyctenular disease of the conjunctiva—in all cases of ulcers of the cornea resisting ordinary treatment—in all cases of sudden failure of accommodation, especially in young children—and finally, in cases of exophthalmia, the condition of the teeth should at least be examined, and if faulty conditions present themselves these should be at once rectified, and then one at least of the possible causes of each of these diseases will be removed.

Schmidt, "Accommodations beschränkungen bei Zahnleiden; Gräfe's Archiv," XIV., i., p. 107.

Zetunder, "Klin. Monatsblätter," 1866, p. 269; 1868, p. 42.

Galezowski, "Journal d'Ophthalmologie," I., p. 606.

Keyser, "Dental Times," 1870.

" St. Louis Med. and Surg. Journ.," 1872, p. 302.

Blanc, "Journal des Connaiss. Med.-Chir.," 1871, No. 27.

Tavignot, *ibidem*, Ap. I.

"Gaz. Med.," 1871, No. 34, p. 369.

Chevalier, *id.*, 1871, p. 461.

Schmidt's "Jahrbücher," B. 129, p. 219; B. 131, p. 178; B. 133, p. 114; B. 138, p. 354.

"Hirsch Jahresbericht," 1873, B. II., p. 537.

Hutchinson, "Ophthal. Hos. Rep.," IV., p. 381.

Wecker, "Ann. d'Oc.," T. LV., p. 130.

"Recueil d'Ophthalmologie," 1882, p. 441.

Auge, "De l'influence de la première dentition sur le développement de la Blepharo-conjonctivite;" These, 1881. E. Baillière.

Priestley Smith, "Glaucoma: its Causes," &c., 1879, p. 10, *et seq.*

Ritouret, "Annal. d'Ocul.," LI., p. 226.

Caffe, "Lancette Française," 1839, Aug. 22.

Watson, "Lond. Med. Gaz.," 1841, fig. 5.

"Revue de Thérapeut. Med.-Chir.," Aug., 1871.
Decassin, "Bull. Acad. Med. Belg." T. XIII., 1853.
"Gaz. Méd. de Paris," T. XXVI., Ser. 3, 1871.
"Gaz. Méd. de Paris," 1871, p. 150; and Mem. presented to the Acad. de Médecine, 1869.
Demorres, "Traité," T. I., p. 376.

ON THE SEAT AND TREATMENT OF RANULA.

By Dr. E. Sounenburg,
DOCENT AND FIRST ASSISTANT AT THE ROYAL CLINIC OF BERLIN.

(*Continued from p.* 101.)

After the removal of the tumour, the lower jaw presented a remarkable appearance. The bone was atrophied and the whole lower arch projected 1½ centm. beyond the upper jaw, so that on closing the mouth the teeth no longer met, the latter appeared to be somewhat smaller than usual and stood very wide apart. The tongue was now very much contracted, and had to be drawn forward by a loop of thread. The edges of the incision were then brought together, a drainage tube inserted, and over all antiseptic dressings. The progress of the case was altogether satisfactory, and in about a fortnight's time the patient was enabled to leave the hospital entirely cured.

The lower jaw still projected beyond the upper one, but in a less striking way than immediately after the operation. The tongue had a peculiar appearance, it was somewhat small but of normal consistency. The patient could eat and swallow with ease, but her speech was not very distinct yet. The examination of the cyst showed the presence more especially of mucus mixed with pus corpuscles, the cyst wall had a distinct epithelial layer, and in several parts of it muscular fibres could be made out.

My attention was at once drawn by this important case, to the fact that the cyst must have sprung from some gland in the substance of the tongue, and as the anterior portion of this organ had become converted into the cystic swelling, it appeared most likely that it must have had its starting point in the glands of Blandin Nuhn. The case was also of interest from the fact that it showed that though the tissues of the tongue were in great part displaced by the cyst, the final result was in so far favourable that the tongue contracted and that it appeared but very little wrinkled, and in a condition to fulfil all its functions. The relations of the lower to the upper jaw proved that the cyst had existed for a length of time at its present size.

In addition to this case which pointed so forcibly to the origin of ranula in the Blandin Nuhn's gland, I have also specially examined on this very point all the other cases which have come under my notice. I have operated altogether on about fifty cases, most of them at the Royal Surgical Polyclinic. Of these fifty, four were cases of very large ranulas which I had the opportunity to remove in the very same way as the one I have already fully described. In four of these the ranula was found on both sides of the frenum linguœ; twenty-seven were instances of simple ranula of that form most commonly met with, where on opening the mouth the cyst is found to project very strongly to one side of the frœnum. In three small cysts existed on the tip of the tongue on its under surface. Two cases were examples of the multilocular variety of ranula; in five the tumour had cicatrised owing to inflammatory processes; cystic enlargement of Wharton's duct was present in two, these not being therefore true ranulas; one was an instance of congenital cystic dilatation of Wharton's duct without the existence of a calculus; in two salivary calculi were present in Wharton's duct, the canal itself being in a dilated condition. The cases due to cystic degeneration of Wharton's duct, or any other of the salivary ducts could be recognised at once by their special shape and position. They formed long sausage-like swellings, which could be distinctly followed into the submaxillary glands. The case of ectasis of Wharton's duct without the existence of any obstruction in any part of the canal was peculiar and was met by me in a boy a few days old. It was an instance of cystic swelling about the size of a bean at the very opening of Wharton's duct; after removal it showed a distinct connection with the duct itself. There was no obstruction to the passage of a sound. I may also mention, on account of its extreme rarity, a dermoid tumour simulating a ranula which I had occasion to remove from the mouth of a girl aged eighteen. It was situated exactly in the middle line and had projected between the genio-glossi muscles.

The ages of my patients ranged from a few weeks to fifty years. Women were more frequently affected than men. A special cause could seldom be found, but if, as Von Recklinghausen also assumes, we have always to deal in ranula with an inflammatory process, we should not be surprised that the tip of the tongue and its glands should be so prone to undergo this change, owing to the numerous sources of irritation they are exposed to. By a careful examination of those cases of unilateral cysts the size of a bean, or hazel, or walnut which constitute the form of ranula most frequently met with by surgeons; and on a full consideration of all these interesting points, I could always find proof that the cysts reached into the substance of the tongue, and stood in connection with the glands in its tip.

To return to another of the signs of true ranula given by Von Recklinghausen, which I have already mentioned.

The cysts were in every case filled with a mucous stringy matter, and the mucous membrane of the mouth could be easily separated from the cyst wall, which appeared as a distinct membrane connected only by loose tissue with the oral mucous membrane. On microscopic examination of the excised portions I often found muscular fibres, thus conclusively proving the origin of the cyst in the tongue, for no muscles exist in the floor of the mouth. In some cases also, but not in all, more especially in those where the whole gland was removed, the epithelial covering could be recognized. When the anterior cyst wall was entirely taken away in these cases, it was possible to press the tip of the finger into the substance of the tongue, and the cyst could often be followed for a certain distance towards the tip of the tongue, and a probe could be passed in that direction.

The shape of a large ranula of the ordinary kind was almost always globular; in all cases, Wharton's duct could be traced over the tumour and allowed the passage of a probe in the whole of its course. As a rule, Wharton's duct lay in the lower hemisphere of the round swelling, so that the larger portion of the tumour projected beyond the opening of the submaxillary gland ducts. In a few cases Wharton's duct was to be found in the upper portion of the tumour, so that the ranula was situated more in the floor of the mouth. The ranula had, in the majority of these cases, already acquired a certain size, and grown towards the submaxillary region.

As is well known, the shape (globular or egg shape,) of the ranula changes as it increases in size, and in a most remarkable way by growing into certain spaces. The larger tumours were usually found on both sides of the frœnum; the cyst having seemingly, at some stage of its growth, slipped under the duct and so became bilateral. This extension would not be conceivable if the cyst originated in Wharton's duct, or any of the ducts of the sublingual glands, for in such a case the increase would of course take place towards the jaws. One special duct of Bartholin is deserving of notice, it is the excretory channel for a large and special portion of the sublingual gland, and opens either into Wharton's duct or by an opening of its own to the outer side of this duct. In this case, less than ever, would it be able to give rise to a tumour in the middle line. The so-called Rivini's duct usually lies quite close to the jaw bone and cannot be the starting point of a cyst in the middle line

Two small cysts on the lower border of the tip of the tongue, in both cases on the left side, which have come under my observation, also conclusively point to the origin of ranula in the gland masses of Blandin Nuhn. They were globular tumours of the size of a bean, filled with mucous, and were situated partly in the tongue itself, and reached to the under surface of the tongue by a thin tense membrane; both of these may rightly be included in the group of true ranulas.

In addition to the cases mentioned above, in which by increasing in size the ranula has reached beneath the frœnum linguæ to the opposite side. I have also met, in four cases, perfectly distinct mucous cysts on both sides of the frœnum; in these we must assume that both cysts grew separately, the one from the right and the other from the left gland of Nuhn. The cases of so-called mammilated, or multilocular ranula, two examples of which I have had occasion to operate, also point strongly, as Von Recklinghausen himself shows, to the growth of these mucous cysts from the glands in the tip of the tongue. This multilocular condition can only be explained on the assumption of its being due to the dilatation of small gland follicles or their ducts. We must also remember that this dilatation of the principal duct causes pressure on the other portions of the glands lying to the side which thus undergo further changes. This last circumstance may also be adduced as a positive proof of the fallacy of the theory that ranula springs upon the so-called Fleischmann's mucous pouch, though I must acknowledge that the origin of a ranula in such a pouch, which is also to be found in the middle line, would appear highly probable. As we all know, Albert Haller, a pupil of Adelmann, has confirmed the dicta of Fleischmann as to the seat of the mucous cyst close to the frœnum, and to its being covered only with mucous membrane on the upper surface of the penioglosus muscle, at the very point where it begins to ascend. The figure given by Haller in his dissertation (Dorpat, 1851), also shows the anatomical position of the ranula. But excluding the fact that this mucous bag is not at all easy of demonstration in addition to the above-mentioned proofs, the proper cyst wall of the ranula, which divides it sharply from the surrounding cellular tissue (on this Von Recklinghausen lays great stress), and the presence of a regular continuous epithelial covering of the cyst are also strong arguments against its origin from a mucous sack.

(To be continued.)

British Journal of Dental Science.

LONDON, FEBRUARY 15, 1884.

MIDLAND ODONTOLOGICAL SOCIETY.

As anticipated in our last issue, the fruit of the recent meeting in Birmingham is the establishment of the above-named Society, notwithstanding the vigorous resistance of some few gentlemen resident in the vicinity, and their apparent victory by their votes.

We heartily congratulate the promoters on their determination to refuse to acknowledge themselves defeated, and consider that such spirit augurs well for the future independence, prosperity, and usefulness of their institution. Such local bodies in the various large centres of the kingdom, whether in the form of scientific and practical societies or that of dental clubs, are at present much needed, so that the scattered members of the profession may have reasonable means of meeting frequently, knowing each other and each others opinions and requirements. We are not forgetting that the British Dental Association in some measure supplies this want. It is most useful so far as it goes; but it can never give the opportunities needed for constant intercourse. There can be no doubt that the British Dental Association has a brilliant future in store, but in the existing transition stage of the dental profession, this position can hardly be expected whilst such disunion is extant, and this drawback can only be overcome by men better understanding each others views.

At present the British Dental Association, although ostensibly representing the profession—being, in fact, its Parliament—has a bureaucratic, and not a constitutional government. Although it numbers some five hundred members, who have each the power of voting on all its measures, it is really worked and controlled by the few leading gentlemen who form its executive. These are active and energetic members, and being frequently in London, have every facility for constant communication and the formulation of fresh rules and proceedings. They are thus in a position to bring forward measures which they have well discussed and agreed upon, and also issuing concurrent "whips," so that when they come before the annual or branch meetings they form a compact and homogeneous body, and usually carry, by premeditated arguments and combined votes, all propositions they choose to introduce; for even though some of the members may disapprove, they are isolated, having had no chance of conferring with those whom they may not have met for a whole year, and, therefore, however valid their objections may be, for want of combination and pre-arrangement, have no effectual power of opposition.

Many men from this cause, who do not approve the doings of the British Dental Association, refuse to join it, often asking, "What good it does them?" Herein they make a fatal mistake. Their proper course is certainly not to stand aloof and wait for good to be done for them, but to honestly put their own shoulders to the wheel and see what good they can do for themselves and others. It is idle to expect the few to work entirely for the many. The active men who have assumed the power will naturally first work for their own or party's interest, and it behoves *every* earnest practitioner to join the British Dental Association, and so bring his influence and vote to bear for the general welfare. This, however, could only be done effectually by his being able to know and frequently see his brethren and such local societies as the Midland Odontological Society, which, like the Odontological and Odonto-Chirurgical Societies, being perfectly distinct from and independent of the British Dental Association, afford the most favourable opportunities by their frequent meetings.

If an instance were required to show that the head centre may at times be sharpened up by the energy of its provincial supporters, acting somewhat independently of itself, it is only necessary to turn to the splendid list of subscriptions and donations of the Dentists' Benevolent Fund, and remember that the executive admitted that, although it still considered the Fund premature—after four years inaction—it was *driven* to inaugurate it by the precipitate action of Mr. Crapper and others. Had it not been for this spur driven into its sides, it is probable that the fund would still be "in contemplation," instead of established, and steadily augmenting its resources.

Mr. Tomes, when before the Royal Commission, considered there were upwards of 2,000 legitimate practitioners in the United Kingdom—500 of these form the British Dental Association. If the remaining 1,500 neither take part in the labour of working nor the expenses, they have no right to complain that their interests are uncared for; by their supineness they deserve the fate they court, and no pity from any one.

CONVICTION UNDER THE DENTISTS' ACT OF 1878.

At the West Ham Police-court, on the 6th inst., a chemist, who practised Dentistry, was summoned by the Honorary Secretary of the British Dental Association for having, on the 14th of November last, appended the initials L.D.S. to his name, when he had no right to their use. The case comes under Section 4 of the Dental Act, 1878, 41 and 42 Vic., cap. 33.

The defendant is L.D.S. of Ontario, and as such, it was contended, he was not entitled to employ the letters L.D.S. unless he added some qualifying word. To this view of the matter the magistrates acquiesced, but remitted the fine from £20 to £2.

As this is the first prosecution under the Act, there must attach especial interest to it. It is well to have actual evidence placed before us that there is to be a raid made upon those who assume a title to which they can lay no claim, and that the Dental Act is to be vindicated from the aspersion that it is merely an enactment passed to do duty of "Bogey." It is clear that if men are induced to contend for a diploma, such a diploma must be protected and its holders assured that they will not have the competition of those who have obtained a minimum foreign or colonial qualification. Even giving the defendant in this case the benefit of the doubt, and assuming that he believed he possessed the right to call himself L.D.S., the result cannot but be productive of good; for in the future the plea of ignorance can hardly be sustained, and those who trespass will find themselves pretty heavily mulcted.

In the recent scandal about dental advertising, the Royal College of Surgeons stated, wrongly or rightly, that they possessed no hold over their diplomas. In this case it would seem that the same do-nothing policy has been adopted, and the onus of the whole affair thrown from Lincoln's Inn Fields upon the Association.

Prosecutions like the above, although sometimes entailing some amount of hardship, we opine can be instrumental, at all events in the long run, in discountenancing tooth drawers and therefore in raising the value of the diploma. The whole system is bad enough to see druggists, with blazon effrontery, announce their willingness to mutilate jaws by attempting to extract teeth; but when to this they add the practice of assuming the status of duly qualified men, it is surely some one's duty to interfere, and we congratulate the British Dental Association upon their triumph. At the same time, such a sweeping course as summoning a man before the magistrates must only be adopted in test cases; the aim should be rather to deter others than to mulct heavily the trespasser, and so to let it be understood that there is a jealous eye watching the irregulars, and that there are those who will be ready when occasion serves to invoke the protecting aid of the law.

MYOSITIS OF THE FLOOR OF THE MOUTH SIMULATING MALIGNANT DISEASE.—The following interesting case appears in the "Deutsche Zeitschrift für Chirurgie:" "A previously healthy man, twenty-six years of age, complained for a few days of difficulty of deglutition, with a burning pain in the anterior portion of the tongue. Three weeks later a swelling appeared under the chin; the tongue seemed to be increased in size, speech was indistinct, and eating of solid food caused pain. When admitted to hospital, five weeks later, the tumour extended from the symphysis of the jaw to the hyoid bone, was hard, elastic, and painful on firm pressure. On each side of the swelling was an enlarged lymphatic gland. The rapid growth of the tumour, together with the enlarged lymphatics, pointed to cancer of the sub-lingual gland, but at the operation it was found to be a diffuse infiltration of the lingual and mylo-hyoid muscles. The mass was entirely removed. Upon examination, it presented the characters of a chronic interstitial myositis, and in no part could any sarcomatous or cancerous structure be discovered.

Upon the mucous membrane of the floor of the mouth was seen a small but deep ulcer, extending down to the indurated tissues. This was, perhaps, the cause of the myositis."

A SINGULAR CASE.—According to the "Dental Register" Professor Watlinti, of Ypsillanti, Michigan, has described a novel affection. Of it, he says: "It has proved to be a very interesting case. I have had it on hand for some time, and I am likely to, I fear, for some time to come. It is in the mouth of a lady about forty-five years of age, and presents an opening through the gum of the lower jaw, at about the point where the third molar should be. The opening is from one-third to one-half an inch in diameter, and the passage within nearly as large. The canal passes backward and upward, just on the outside of the jaw, and back into the cheek, to a point nearly opposite the middle of the ear, where there is a large cavity in the location of the parotid gland. It has the appearance of the breaking down and wasting away of this gland. When I began treating it quite large pieces of yellowish material, resembling gland substance came away, but so soft and broken down that the microscope revealed little or nothing of a structural character. The opening and canal has existed for two or three years, the general health is not disturbed by it, there is not much pain at present, nor has there ever been severe pain. There is no appreciable discharge from the opening. I am greatly interested to know just the nature of the case. What is the matter? Is it possible for the parotid gland to break down and waste away in that manner? The duct of Steno is closed. I have consulted with some of our physicians and they are as much in the dark as to the cause of the trouble and its nature as I am." I recently saw this case, and found it about as described above. The health of the patient is good, and the part affected is evidently improving by the manner of treatment employed, which is occasional washing with mild disinfectant and antiseptic preparations, no general treatment has seemed to be required. Is it possible that the parotid gland could be thus destroyed without producing more disturbance than has existed in this case?

FOUNDING OF DENTAL HOSPITAL OF DUBLIN. — Mr. O'Duffy undertakes to vindicate his share of the recent *fiasco* in connexion with this hospital. He writes: "The hospital was founded by me in 1876, with the object of extending to Ireland the provisions of the Dentists' Act . . . . . . and at the first meeting of the profession it was distinctly laid down, that the foundation be founded upon principles which would prevent it from being made subsidiary to the interest of individuals. . . . . It then became necessary to appoint a number of lecturers. . . . To attain this end the hospital was handed over by me to Mr. H. G. Sherlock" [as Hon. Sec.]. From this time Mr. O'Duffy affirms the hospital degenerated into a "mere tooth-drawing establishment." Finding matters thus, he addressed several letters to the Hon. Sec., but, he alleges, received no replies. A formal enquiry was solicited, but still no notice was taken by those in power; so Mr. O'Duffy then wrote to certain gentlemen, whose names appeared in the published prospectus as being upon the lay committee. These letters were answered, and to the effect that these gentlemen were not aware that they were upon the committee. The whole affair is very painful, and there is no doubt that some very gross mismanagement has been allowed to occur, and that very sweeping alterations will have to be adopted for the future career of the hospital.

"ITALIANIZED" AIR.—Mr. T. Gilbert Bowick, F.R.M.S, draws attention to a "discovery" of Dr. Carter Moffat's. Speaking in a lecture upon the atmosphere of Italy, he says: "It has been decisively ascertained that free ammonia exists in the air of Italy to a larger extent than even in the atmosphere of many parts of the sea coasts of other countries. A number of the small lakes are also largely impregnated therewith; and in fact, volcanic ammonia from the *lagoons* is an article of regular commerce. We may, therefore, assume that the action of sunlight and heat, largely aided by ozone from the sea air, in conjunction with moisture, sets free the ammonia from the extensive volcanic districts containing a salt of this compound. There is also the formation, collaterally, of an ingredient not previously noticed by philosophers." Dr. Moffat's attention having been directed to these peculiarities of Italy, he connected the chemical side of the question with a practical attempt to manufacture chemically Italian air. He "succeeded in placing before the public an instrument known as the 'ammoniaphone,' which contains an absorbent material saturated with peroxide of hydrogen combined with condensed ammonia and other ingredients, through which a current of air is drawn into the lungs. It is no stretch of imagination to say that this is in reality an highly concentrated artificial Italianized air, in a extremely portable condition. Dr. Carter Moffat's voice was originally very weak, harsh, and destitute of intonation. By the use of the 'ammoniaphone," it has now become a pure tenor of extraordinary range."

Spence Metal.—Dr. R. Telschow in a paper in the "Deutsche Monatsschrift," claims to have been the first to use Spence metal with his hydraulic press. That distinction has also been claimed by M. Saussine and Herr Kahud, but Herr Telschow can prove to having procured and used Spence metal early in the year 1880, and at the International Congress in London, urged its use on the dentists there present. The French dentists present were wholly unacquainted with this metal. If M. Saussine had used it, he says, would they not surely have heard of it? Added to this M. Saussine's press was not finished till the middle of 1882, and Herr Kahud's half a year later.

Peroxide of Hydrogen as a Parasiticide.—Hydrogen peroxide may be used with advantage for destroying the green parasites of the teeth. Brush the teeth first with the machine and pumice stone as clean as possible, and put on the hydrogen peroxide with nickel pincers and a little sponge. The oxygen destroys the parasites; this operation must be frequently repeated.

Time-saving Method of Recording Appointments, &c. —Dr. Parmele read a paper before the new England Dental Society "Concerning Records." By means of a most ingenious adaptation of the card catalogue system, now so widely used in libraries, Dr. Parmele is able, with a minimum expenditure of time and energy, to keep a record of all operations, appointments, &c. Firstly there are appointment cards, on these are mentioned name of patient and dentist, hour, date, and place of appointment; which remains as testimony to settle any dispute. On other cards are printed figures of the teeth, and by certain signs, the exact condition of the teeth are marked at each visit, thus a glance suffices to indicate the exact condition of the mouth. Other cards contain simply the name, and upon these the dates of the visit are entered. The day-book is thus simplified, only gross amounts being entered, all items being found by reference to the cards. The system is most ingenious, and we fancy will readily be adopted by the busier practitioners in England.

Aboriginal False Teeth.—A gentleman of Santa Barbara, Cal., has in his cabinet of curiosities several sets of false teeth, exhumed from the graves of aborigines at the Santa Barbara islands. They are formed each from a shell, which is fashioned to fit the roof of the mouth, and could be adjusted outside of the gums. The teeth are perfectly firm and easily adjusted.

PROSECUTION UNDER DENTAL ACT.—A very important case has just been brought before the magistrates at the West Ham police station. Mr. Phillips, the presiding magistrate, decided that a Dentist, who is a licentiate of the Medical College of Ontario, had committed an offence against the Dental Act of 1878, by announcing himself as L.D.S. The magistrate thought the right to use those letters could only be granted by the medical authorities in this country; but that the defendant would have been within his right if he had added "Ontario" to the letters. The full penalty of £20 was not imposed, but a fine of £2 was inflicted. This is the first prosecution under the Act, which accounts for the mitigation of the fine; the case is clear enough, and will, we may hope, exercise a salutary influence.

WE are informed that Mr. Frank Huet, upon resigning his post upon the staff of the Manchester Dental Hospital, received from the committee the expression of their warm approval of his hospital services, and great regret that he found it impossible to remain among them any longer.

DEATH OF A LADY DENTIST.—According to Mr. Goldsworthy's "Recollections of Taunton," the only dentist practising within the borough sixty years ago was called Blackmore. This assertion is fully borne out by the inscription on a gravestone in the parish churchyard of St. James, in this town, recording the death on May 14th, 1840, at the age of seventy-one years, of Richard Blackmore, the first resident surgeon-dentist in this town. Mr. Richard Blackmore, who was a son of Mr. John Blackmore, of Moorehayes, Cullompton, Devon, was born in the year 1769, he being one of the younger sons of a family of twenty-two children. Mr. Richard Blackmore was originally apprenticed to a tradesman carrying on business in this town, but being naturally a mechanical genius, he afterwards adopted and practised the profession of a Dentist until the time of his death. His only surviving daughter, Miss Julia A. H. Blackmore, from her father's death, and before, until within the past four years, successfully followed the same profession as that of her father. From that time her health and sight had been gradually failing, which, together with her advanced years, naturally incapacitated her from actively following her vocation. It is, however, worthy of note, that on Thursday, January 10th, 1884, were interred in St. James's churchyard, in this town, the mortal remains of one who was, in all probability, the first female dentist in the United Kingdom who did her own mechanical work, and whose career may be instanced as another proof of what may be done by self-help and self-reliance. Miss Blackmore, whose death took place, at the age of eighty, on the 6th ult., was born at Awliscombe, near Honiton.

AMERICAN DENTAL COLLEGES.—Boston Dental College; Baltimore Dental College; New York Dental College; Indiana Dental College, Indianopolis; Royal College of Dental Surgery of Ontario, Canada; Dental Department Rush Medical College, Chicago, Ill.; Dental Department University of Tenn., Nashville, Tenn.; Ohio College of Dental Surgery, 29, College Street, Cincinnati, O.; Dental Department of the State University of Iowa, Iowa City; Missouri Dental College, cor. Seventh and Myrtle Streets, St. Louis, Mo.; Dental Department State University of Michigan, Ann Arbor, Mich.; Department of Dentistry of University of Pennsylvania, Thirty-sixth Street, and Woodland ave., Philadelphia, Pa.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

IMPROVED FOSSILINE (No. 2).

THE Dental Manufacturing Co. have, at the suggestion of several practitioners, made a new form of fossiline (which is designated as above), the important alteration being that the powder is made finer, making the cement work smoother. Their fossiline is so well known and appreciated that there is no need to further mention it here. There is only to add that this new fine powdered preparation appears to lose none of the old claims to reliability and utility, to ensure its having a fair trial, at all events amongst the users of the old.

RITCHIE'S NEW FOOTSTOOL.

MR. RITCHIE has brought out an excellently got up footstool, in pine veneered walnut, 22 in. long by 14 in. wide, rising from about 6in. to 14in. It is carpet covered and specially proportioned to be placed completely under his new chair (recently noticed in these pages). It is, however, equally applicable to any other chair, and, we understand, could be easily proportioned and covered to suit any requirements.

WATER CUP FOR DENTAL ENGINE.

Mr. Josiah Ritchie also introduces to our notice a water cup for attachment to the upright stem of the burring engine. It is of nickel-plated metal, somewhat in the form of the bowl of an egg cup, with a rather heavy ornamental pendant. This is swung by two pivots in a thick ring, also nickel-plated, which stands from the engine in a horizontal position when the stem is perpendicular, being fastened by a second and smaller ring or socket joined to the first, which slides up and down the engine stem, and can be fixed at any height by a set screw which it carries for the purpose. When the engine is sloped in use, the heavy cup with its pendant counterpoise swings gently on its pivot, and so always retains its level position, but to avoid the possibility of the water overflowing, Mr. Ritchie proposes the insertion of a small suitably-shaped sponge.

MR. BRAUN'S "RELIABLE" MODELLING COMPOSITION.

Mr. H. C. Braun has sent specimens of his new "Reliable" composition for taking impressions. It is after the nature of the familiar "Stent's," but he claims for it that it may be used at a very moderate temperature—about 115° F. —when it will be exceedingly soft, and that it will set in the mouth sufficiently hard for removal in forty seconds. And we are bound to admit that the first trials seem to bear out his statement to the letter. It is also decidedly tough and elastic at the proper moment for removal.

Mr. F. Douglas, of Fenton, Michigan, writes: "For many years I have known that a few drops of cold water thrown in the face would instantly remove nausea, at least for a short time. Many times I have used the idea in taking impressions of the mouth. A few days ago, while administering ether, I saw a nice prospect of a vomiting spell. After the patient began retching severely, I threw a little cold water in the face. The retching instantly ceased, and by repeating it a few times vomiting was prevented till I had extracted fifteen roots. A day or two afterward I had a similar case with the same result. Those two patients were apparently beyond consciousness."

Abstracts of Foreign Journals.

SCIENTIFIC AMERICAN.

"OZONE AS AN ANÆSTHETIC AND HYPNOTIC."

Prof. Binz, of Bonn, has made a series of experiments upon the physiological effects of pure ozonorized air. He did not prepare the ozone which he employed by chemical means, as ozone prepared in this way contains many impurities, but by electricity, using a tube made by Werner Siemens for the silent discharge. The tube was an inch in diameter and a foot long, and was operated with four Bunsen cells and an induction coil that would give a spark nearly an inch long when the battery was in good order. The ozone tube was connected with a chloride of calcium cylinder charged with eight inches of coarsely powdered chloride of calcium between plugs of grass wool. The air to be ozonorized had to pass through this tube, which filtered and dried it sufficiently; the former is of importance for the purity of the ozone, the latter for the quantity. The ozone thus prepared, when conducted into water recently distilled over permanganate of potash and then made slightly alkaline, did not show a trace of nitrous or nitric acid. A second experiment gave the same result.

We cannot go into all the details of the precautions used in its inhalation and the apparatus employed. Experiments made upon the lower animals showed that an apparent sleeping could be produced before the air passages were irritated by it, and this was more distinctly noticed in men. The breathing before sleep began was quiet and full, the persons experimented upon said that it was easy and comfortable, and the passage from the waking to the sleeping state was a feeling of the most agreeable indifference. The pulse never exhibited any perceptible change during the experiment, nor was there any alteration in the pupil of the eyes or the colour of the face. If the quantity of ozone inhaled is too large, from the apparatus working too fast, or the tube being too near the nostrils, it may excite violent coughing, nausea, and choking, but not the slightest sensation of local irritation in the chest is perceived. In all observations hitherto made as to the effect of ozone on men, they have only described the irritating effect on the air passages resembling those of chlorine. The reason of this was that the ozone was not mixed with air in suitable proportions, and in most cases also to impurities of the ozone used. In the former respect Binz compares ozone to alcohol, which used in its concentrated form irritates the mucous membranes violently, destroys the epithelium, coagulates albumen,

&c., but when very dilute scarcely exerts any perceptible influence on them. Owing to the very transitory effect of ozone, it will never take the place of nitrous oxide for anæsthesia for surgical purposes. Binz himself does not lay much weight upon the practical importance of the ozone sleep, but hints that further experiments in this direction may lead to important results.

DEUTSCHE MONATSSCHRIFT FÜR ZAHNHEILKUNDE.

"MAY NARCOTICS BE ADMINISTERED WITHOUT WITNESSES?" by Dr. A. Petermann, Frankfort.

The Schliswig Holstein Society of Dentists discussed the two following questions at their last annual meeting:

1. Is there a law which obliges a dentist or doctor to call in a second dentist or doctor?
2. Is there a law which obliges the dentist or doctor to call in a third person, not a dentist or doctor?

According to Dr. Petermann there is no German law obliging a dentist or doctor to call in a second or third person during the administration of narcotics; but whether such a law exists in any of the German States or provinces is uncertain. This was the state of things in 1850. This year it was asserted, at the meeting of the Dental Union, that such a law does exist in the fair state of Brenen. In the Prussian States surgeons of the second class were allowed to use and to order internal remedies. The law of the present day recognises no surgeons of the second class, and ranks dentists with surgeons, and they alone have the right to administer narcotics on their own responsibility, and only in such cases as came within their sphere of work, and they are answerable to their own consciences and to the law. Then the doctor or dentist would be morally, not legally bound, to call in a third person; and every one will agree that the presence of a witness is most desirable.

"THE FIRST PERMANENT MOLAR OF CHILDREN, from the age of six to twelve," by Dr. Klare, Leipsic.

Dr. Klare, of Leipsic, gives his ideas upon this important subject. The molars of a child of six years old are very apt to be carious, but their preservation by means of stopping is difficult, and the results very doubtful. If a normally developed tooth in the mouth of a healthy child is not very much diseased its preservation may be attempted unless it is better to remove it for the sake of making room for other teeth.

Teeth should invariably be removed, not stopped, in the case of scrofulous or badly nourished children. Carious first teeth are always liable to injure their neighbours. If there is imperfect development of the jaw the removal of the first molar is absolutely necessary. These remarks apply only to the teeth of children between the ages of six and twelve years.

BLEEDING AFTER EXTRACTION OF A TOOTH, stopped by permanent compression.

For this a plate is prepared and fastened over the bleeding alveolus by means of the teeth nearest. By this means Prof. Heider, in 1866, stopped bleeding which could have been stopped in no other way. The numerous cases of death which have occurred from bleeding after tooth extraction, should induce Dentists to be careful in every critical case to prepare immediately a plate. Dr. Kleinmann says that he has generally been able to cure the alveolus after bleeding by means of finger pressure and compress bands, but in a late case was compelled to use the alveolus obturator. He says the cause of such bleedings depends more on constitution than on local causes. Heider says that when a patient is under mercurial treatment for any disease of the blood, no Dental operation should be undertaken. Dr. Kleinmann's case was very remarkable, for in most cases, the space of time between the operation and the consequent bleeding does not exceed eight days; in this case eleven weeks had elapsed when a dangerous hæmorrhage came on. A boy of fourteen had had a lower molar extracted seven weeks before he came to Dr. Kleinmann. The place had bled from time to time, and fourteen days before the hæmorrhage came on so violently that he went to the Dentist, who syringed it for an hour and a half, sending him away with a compress. After this the patient became bloodless and weakened.

A formation about the size of a hazel-nut was seen between the second bicuspid and second molar, projecting inwardly and outwardly over the alveola border. On the upper surface was an opening about the size of the head of a darning needle, and on being pressed dark red clots of blood appeared first, and afterwards light red. The finger pressure would not stop the bleeding; the swelling was provided with a compress, and the boy told to come again in a few days, but he did not do so for four weeks, and then because he had lost much blood in the night. He was much weaker. To avoid unnecessary loss of blood the swelling was lanced, the inner space stopped with wound sponge, a compress put on, and the patient told to come the same day. On this occasion the lingual surface of the formation was cut through and was entirely extirpated. The probe pressed deeply into the alveolus, and increased the flow of blood. A compress band was applied, and the following mouth-wash ordered .—R.: alcohol, 60 parts; acid. carbol., pur.; ol. meuth. pip., 2 of each parts. Ten drops in a glass of water to rinse the mouth.

Finally, an impression was taken on caoutchouc, fastened in with two metal clamps as an obturator. The clamps were so applied that they pressed into the gum. In applying the plate the alveolus was not tampered with, for the blood coagulation is the most natural means of binding.

The plate should be worn till the wound is healed. In the above case the healing was complete in five days, but the patient was recommended to wear it eight days longer.

A plate can be prepared from celluloid in two hours, and it is advisable for every Dentist to have one prepared where a dangerous after-bleeding is expected.

"CHLOROFORM NARCOSIS," by Jul. Parreidt.

Although nitrous oxide is the most generally used narcotic in dental operations, yet cases of death frequently occur through its use. The fact that there have been so many bad cases, although chloroform is so infrequently used for dental operations, seems to indicate that a light chloroform narcosis is the most dangerous. Through such, the breathing centre and especially the vagus is weakened. The irritation during the operation influences the vagus and the heart ceases to act, which is not the case in deep narcosis.

At the Academy of Medicine in Paris, Gosselin said there were three methods of narcotising through chloroform. First, small doses are given from five to six drops, which is allowed to be inhaled before more is given. Second, large unintercepted doses; at first, ten to fifteen grammes of chloroform are shaken on a cloth or sponge, which last is kept wet with chloroform the whole time. This method should never be used, as its danger has been shown by experiments on animals. Third, progressive increasing doses with interruptions; this method Gosselin uses. About five grammes are shaken on a cloth and held five inches from the patient's mouth. After six or seven inhalations the patient is allowed to take two breaths of atmospheric air, then chloroform is again inhaled. After every eight or ten chloroform inhalations, the patient takes two breaths of atmospheric air. Then the mixture is increased to seven, ten, and twelve grammes. A perfect narcosis ensues in from six to twelve minutes. It takes the following course: First, half-sleep with consciousness; secondly, agitation and mild delirium; thirdly, loss of consciousness, contraction of the muscles; fourthly, deep sleep, rest of the muscles and contraction of the pupils. The advantage of this method is that the blood and nerve centres do not receive too much chloroform, as a part is exhaled during the intermissions.

According to Gosselin, in France one case of death only occurs in every 5,200 narcosis. He says that his method would never cause death and have no dangerous consequences. Labbé is an opposer of Gosselin's method, as the frequent intermissions necessitate the use of more chloroform. He uses small uninterrupted doses. Verneuil thinks the impurity of chloroform is not unimportant. Not every death through chloroform can be avoided on account of certain affections, fatty heart being one of the most frequent causes. Roschard thinks a particular apparatus should be used, which would let in certain quantities of atmospheric air. Trélat is a great opposer of Gosselin—he lost a patient by using that very method.

DENTAL REGISTER (*January.*)

"PROSTHETIC DENTISTRY," by C. B. Porter (read before the Michigan State Dental Society).

In order to proceed correctly we must have a definite plan. We must classify faces. Our author suggests the following: 1. Oblong faces; 2. Round faces; 3. Pyriform faces. Proportion must be considered in fitting teeth—large jaws require large teeth and vice versa. It is urged that teeth convey the points which distinguish races and nations as well as individuals, and so in fitting false ones we must strive to make them as characteristic of the individual as possible. The face must be studied, and each face recognized as one by itself, and so requiring individual treatment.

CAULK'S DENTAL ANNUAL.

"USES OF GUTTA-PERCHA," by Dr. Bonville, Philadelphia, Pa.

For general use, our author prefers gutta-percha to any other stopping. Placed in a dry cavity it will preserve tooth substance, while its sulphur will prevent caries. The majority of cavities for temporary work can be filled without the rubber dam. When several teeth require filling on the proximal, and involving the grinding surface, all the cavities upon one side should be cut out at one sitting, and filled with a pink base-plate gutta-percha, well warmed and in a single piece, pressed well home; it should be trimmed with a warm knife. This remains for two weeks to six months or a year, to press apart the approximal surfaces, and to allow of a perfect and full contour. The gutta-percha is then replaced by gold or amalgam.

In temporary teeth, where on the approximal surface they are but slightly decayed, and there is danger of exposing a pulp—the cavity is cut out and gutta-percha put in—decay does not continue. Gold is rarely suitable for persons under twenty. Pink gutta-percha is very sticky, and so is to be placed in first, and the capping done with the white variety. Dr. Bonville concludes by saying, "My advice to young men is, avoid gold and rely more upon the plastics in certain operations."

"A Few Things to bear in mind when Filling a Tooth," by C. T. Stockwell, D.D.S., Springfield, Mass.

1. *Its Mechanical Structure.*—We thould remember that the ends of very delicate tubules are exposed, and that the fracture or mechanical injury of this tubular surface of the cavity is the first step in the failure of the purpose of the filling. If a material is used that requires the use of electricity, heavy automatic plugging, or a forty-pound hand pressure to secure a perfect adaptation, the result is liable to be "*inflammation.*"

2. *Its Histological Structure.*—Unless the tooth be "dead" the tubules contain "living matter," or soft tissue, in which "the play of life's forces" are constantly going on. This soft tissue, freshly exposed, needs a "*dressing*" that shall be protective rather than a "*bruising*" by a punching machine. The dressing should be non-irritating to this sensitive tissue, and, also, it should be *non-conductive* of irritating influences from without—a second and very important factor to "*short-lived*" operations.

3. *The Permanent, Hermetic Sealing of the Cavity.*—The surgeon, in dressing a flesh wound, considers it of vital importance to keep the part "free from dirt;" the "dirt being active as an irritating agent because it contains destructive organisms, or *germs* of organisms capable of a speedy development into deleterious agents. A lesion in either the soft tissue or the hard tooth tissue differs only in degree."

4. *The Restoration of Normal Appearances.*—While comfort and durability are of vital importance to be kept in view during the operation, the anæsthetic effect should not be considered of less importance, especially if the ideal is our aim.

Now have we available, the material, or a combination of materials, by which these objects may be gained? To the first, the answer must be negative. In a *combination,* we may arrive at a nearer approach to the ideal. Comfort and a reasonable durability may be secured; but when to these we wish to add "the restoration of normal appearances," we find that there are yet "more worlds to conquer." The exposed tubules, with their contents, should be *dressed* by a wise selection, and use of some of the "plastics" that are non-irritating and non-conductive of thermal influences, and this protected by a metal covering—in the absence of anything better—hermetically seals the cavity.

"TREATMENT OF DEAD PULPS," by Dr. Ingersoll, of Keokuk, Iowa.

In attempting to remove the dead tissue, the same plan should be adopted for multiple and single rooted teeth—fine hooked brooches being used. All the tissue cannot be so reached; arsenious acid should be used for devitalising, and dialysed iron to prevent arsenic hanging about.

Antiseptics are reprobated, they only delay action for months, the fragments of pulp left being sooner or later the focus of an abscess. Having removed all accessable caries, the cavity is plugged loosely with raw cotton—this stopping is to be taken out every other day. After a week, the cotton is removed and the cavity washed out with soda and water. If the gum is sore use a topical stimulant, direct patient to pursue same course as before. On the reappearance of the patient, cleanse with soda water, an alcoholic solution of salicylic acid and moisten a pledget of wool with wood creosote, and place it as near apex of root of tooth as possible, close the whole cavity with cotton wool soaked in shellac, and after a week remove the whole, and fill down to the end of the root. In spontaneously dying pulps, at least a week prior treatment should be undertaken before stopping.

"ANOTHER METHOD OF MOUNTING CROWNS."

Dr. Swasey, reading a paper before the Chicago Dental Society, complains that, in using the Morrison or telescope method, he finds the phosphate hardens too quickly, especially in hot weather. The oxide-chloride cannot be used alone. He combines the two thus: the oxide-chloride is first mixed, and the gold crown filled half full; next, the phosphate is mixed and poured in. As the crown is driven on to the root, the surplus coming out the vent made in the grinding surface of the gold crown is oxide chloride, the phosphate acting as a perfect cement or coffer-dam between the band and the root keeping back all the chloride. Dr. Swasey recommends a method similar to Morrison's, which he finds better and cheaper. Prepare the root for the band, according to the method given for a Morrison's crown; adjust a platinum band (24 gauge) around the root, and of sufficient strength to antagonise with the upper or under teeth, as the case may be. After driving on to the root, the patient closes his mouth, the edge of the band is then fitted with a corundum wheel until the occlusion is complete; the tooth is next treated, either by capping or devitalisation, the rubber dam is adjusted around the platinum band, and, if necessary, the bottom filled with phosphate of zinc, and the top with amalgam.

ITEMS OF INTEREST (*February.*)

"THOROUGHNESS IN DENTAL OPERATIONS," by Dr. W. S. Elliot, Goshen.

In this paper the evils of acting by rule of thumb, employing mere empirical rules, are urged. In filling a cavity the extraneous causes of trouble should be attended to, such as morbid conditions of the gum. Again, cavities must be completely cleansed before filling, or periostitis will result. After excavating, Dr. Elliot syringes out with warm water, then swabs out with cotton wool dipped in solution of permanganate of potash (4 gr. to 1℥) or—

℞

Alcohol	℥i.
T. opium	ʒii.
Chloroform	ʒv.
Sulphuric ether	ʒvi.
Gum camphor	℥s.s.
Oil of cloves	ʒi.
Oil of lavender	ʒi.

M.

Soak cotton wool in this, and then drop on some crystals of salicylic acid, probe the cavity with the cotton wool wound round a broach, and then fill with phosphate of zinc. In one week a permanent crown may be inserted on the zinc.

Another cause of failure in filling approximal cavities, is a want of thoroughness in excavating that portion of the dentine nearest the neck of the tooth. This is especially the case when the gums are spongy. Failures also arise from imperfectly condensing the first portion of gold inserted.

"DIAGNOSIS," by Dr. Ingersoll, of Keokuk, Iowa.

In making a diagnosis we have to consider the symptoms, of these the most prominent is pain.

Pain must be carefully scrutinised; it may be subjective or existing only *in the mind* of the patient, or objective. Cold as a test of the vitality of a pulp is unreliable, as in those who possess a neuralgic diathesis, cold will excite pain even when the pulp is absent. The same caution must be used in testing the pulp's vitality by means of drilling. All sensation in the teeth is usually attributed to the presence of the pulp, but we not uncommonly find the dentine tubules opening into the canaliculi and lacunœ of the cementum, thus establishing a vital connection between the cementum and the nerves which form a plexus over the periphery of the dentine. Thus after devitalising the pulp the living nerve tissue may yet remain underlying the enamel. Hence sensation to the entrance of the drill is not proof of the existence of a living pulp. Cases may cause trouble and false diagnosis, in which a cavity exists near the anterior buccal opening, the pulp although not uncovered is less protected and so feels changes of temperature, when the mouth is opened it aches. No treatment in such cases is requisite. False diagnosis leads to false treatment. The case of anodynes is instanced. Whiskey will deaden the capacity for feeling pain, but not remove pain.

"REMARKS on the Changes which occur after the Extraction of the Natural Teeth, and the Propriety of early Introduction of Artificial Substitutes," by Prof. J. Richardson.

After extraction, inflammation, more or less intense, occurs. Inflammatory products are thrown out, and the alveolus filled; reparation takes place by the organization of this material. Absorption is a later phenomenon succeeding the defervescence of inflammation, and due to loss of function. Concurrently with the absorption is a "depcsition of osseus matter" in the socket.

As to the interval which should elapse between the extraction and the application of artificial teeth, our author thinks early introductions are best in all cases demanding full dentures. This practice prevents displacements and deformities occurring which might prove difficult to overcome. Some advise *immediate* introduction of artificial teeth. They urge that the inflamed parts are less liable to injury in mastication if protected by a well-fitting plate; that they are benefitted by being protected from cold air, and the sudden changes of temperature to which the mouth is liable. On the other hand there is danger of the artificial plates acting as irritants, and prolonging and aggravating the inflammation which follows extraction. Absorption, it has been shown, does not occur until inflammation has subsided; so that if there is permanent irritation and chronic inflammation there will be no absorption, and so no closing in and consolidation of the alveolus. Prof. Richardson leaves the question open, but would not hesitate to introduce artificial plates immediately after extraction if solicited to do so.

In all cases where the substitute is applied at an early period, the cavities in the model corresponding with the sockets of the teeth should be filled even with the ridge, and should not interfere mechanically with the filling in of the jaw.

SOUTHERN DENTAL JOURNAL.

"Letters from a Mother to a Mother on the Formation, Growth, and Care of the Teeth."

IV. *Food Principles.*—Lime salts are essential, especially during pregnancy. Lime water, made by putting a tea cup full of common clean lime into a quart of water, a tablespoon full may be taken in milk four or five times a-day. The water may be renewed almost indefinitely. The mixture must be well stirred before decanting.

The teeth should be bathed after taking acid foods, fruit, &c. Stress is laid upon the careful dieting of pregnant women, and nursing mothers, who fail to recognise that, as their milk comes from their blood, if the latter be impoverished by insufficient or innutritious food their offspring suffer, and especially will they suffer in their bones, their teeth, or their skin. Calcium, or lime, exists in milk, eggs, potatoes, grains, or cereals, but *not* in the fine wheat flour which is in general use.

In 500 pounds of *whole grain* (wheat) there are 78lbs. muscle material, 85lbs. of bone and teeth material, and 12lbs. of fat principle.

In 500 pounds of *fine flour* there are 65lbs. of muscle material, 30lbs. of bone and teeth material, and 10lbs. of fat principle.

Oatmeal is an invaluable food; it should be prepared in porcelain to prevent burning.

THE NEW ENGLAND JOURNAL OF DENTISTRY.

Dr. Parmele's valuable article, "Concerning Records," has been noted elsewhere.

"Aconite," by George A. Maxfield, D.D.S.

Aconite, we are informed, was first used in medicine by Baron Störch, of Vienna (1762). In 1813 it had almost fallen into oblivion to be again revived. The Indian plant, or *bish,* is the most active. In 1833 the alkaloid was separated, and later, a second aconelline was discovered. In poisonous doses the effects come on in from five to ten minutes. There are great disturbance of respiration, muscular weakness, vascular depression. General sensibility is impaired, a universal feeling of numbness existing. The peculiar tingling sensation is most characteristic. No antidote exists, stimulating remedies are employed to counteract its influence. The paper, although furnishing much of therapeutic interest, offers no new uses of this drug likely to be serviceable to Dentists. Its uses in neuralgia are too well known to require repetition.

Aconite is recommend in the form of the tincture to be given in ♏ii to ♏iii doses for alveolar abscess.

"The Folly of Extracting Teeth," by Hyman Rosa, M.D.S.

The author, besides informing us that "the American people" lead the world in culture and civilisation, does not furnish much novel food of thought. As a youth his molar—not his wisdom tooth—was dragged from him with Garengeot's key, which set him thinking of the merciless manner in which teeth are extracted. He vehemently urges us to avoid extraction and have resort to conservative Dentistry, and there he leaves us.

Errata.—On page 119 (Feb. 1st), eighth line from the bottom should read "Pure gold (rolled to No. 34 American guage) is to be used for soldering on to the ferrule to form the top of the cap."

Review.

The Medical Annual and Practitioner's Index. A Yearly Record of Useful Information on Subjects Relating to the Medical Profession, 1883-4.—London: Henry Kimpton, High Holborn.

The volume before us is, as we are told by Dr. Wilde in the preface, the compilation of several collaborateurs, each undertaking a portion. The volume treats of the most diverse matters, and its compilers have taxed their ingenuity to some purpose to collect into little over three hundred pages, a vast amount of information. We venture to think the ambition shown has in many cases exceeded the possibility of accomplishment, space and cost quite frustrating well-meant efforts. We can, however, say that it is surprising how much has been attained and what a fund of the most bizarre information has been brought together, while the patchwork has been really skilfully performed.

The first portion of the work is devoted to brief notes of the principal facts and hints which have appeared in the journals during the past year, both English and foreign. Thus, we find the experiments of Dr. Berridge upon rapid breathing as a means of producing anæsthesia, are noted with the more important experiments of Dr. Brown-Séquard. No reference, however, of special interest to dentists finds a place in this section. Various inventions are next noted with the ordinary press plates. A really useful portion of the book is the twenty-five pages devoted to health resorts both of this country and abroad.

We find some notes on sanitation by Mr. Dymont, which are stated to be intended to provide, within small compass, a convenient reference for medical men on the principal points of unhealthy environment, and its pathologic effects, including hints on the now simple and ready means of immediately amending them; as well as indications of the direction in which cure is to be sought. This section seems well done, although somewhat too brief. In it, unfortunately, some important matters are left untouched, and we note several omissions, such as the use of perchloride of mercury among the antiseptics. The most available disinfectants are stated to be, chlorine ozone, the permanganates. Ozone can hardly be said to be a particularly come-at-able preparation.

Under the heading of medical education, a short account is given of the medical schools and the curriculum requisite for the different examinations.

The editors request information upon this subject, and they are right, as many of their remarks are prompted by want of accurate knowledge of the matter in hand. It appears to us a grave omission that no sufficient reference is made to the various dental hospitals, while information is lacking about the education of dental students.

The rest of the volume is occupied by a Medical Gazetteer and various notes, many of which will be found of great service.

We can safely say that the principle upon which the book is based, is sound, and that, even as it stands, it will prove very useful, and may be expected in ensuing years to obtain that amount of re-writing and toning down which some sections at present require.

The Teeth: their Formation, Diseases, and Treatment. By THOMAS GADDES, L.D.S.—David Bogue, London.

Mr. Gaddes in his preface, states that he intends his book for the public. It is to give, in a popular way, an account of the physiological processes concerning the teeth. In the introduction the importance of prevention of dental disease is enforced. How this prevention is to be effected is next dealt with, under the heading of "Development of the Teeth and Right Living." In a popular work, especially of the unpretending size of the volume before us, one must not expect too close an adhesion either to scientific accuracy or a fund of exhaustive information. At the same time it seems almost a pity that in popularising, care should not be taken to avoid giving the uninitiated false impressions.

We object to a phrase such as the following: "It would appear that the lime particles are depositied in this basis-substance according to ordinary chemical laws, while the living matter elaborates and determines the formative quantity of that basis-substance," since lime can hardly be said to exist in a particulate state in the circulation, nor does it seem clear what is meant by the "living matter elaborating the basis-substance."

There is a useful section on "diet," which is carefully and accurately prepared, although we think more stress might be laid upon the *quantity* of food to be taken and the excess to be avoided. We also fail to see the utility of publishing in a manual of this sort elaborate tables of compositions, such as "of fine flour, whole meal, oat meal."

In the section upon "Irregularity of the Teeth," some useful points are noted, the author enforcing his own views upon the subject of premature removal of temporary teeth.

Next we come to the consideration of hygienic treatment. This has been less carefully prepared than the preceding sections. On the whole we should hope that this little book may be of use by inducing people to treat their teeth more kindly, and bringing before their notice the important fact that the physiology of the body is a study, not only for the expert, but for every man, woman, and child, who desires to possess a healthy mind supported by a healthy body. Mr. Gaddes has attempted a difficult task, and has accomplished a useful and chatty volume as his result; a result one could not have doubted, coming as it does, from so practised a pen.

Dental News.

SHEFFIELD ASSOCIATION OF DENTISTS.

An Association of Dentists, possessing a registrable diploma, has been formed in Sheffield, the objects of which are the encouragement and diffusion of knowledge of dental surgery, to advance the interests of the profession and ultimately to establish a dental hospital in the town.

The meetings are held monthly from October to June, the paper for the evening being read at the residence of the author. In Feb. last, the President (Mr. Jos. Harrison) gave his address, and the following papers have since been read: "Dental Ethics," by Mr. Brindley (Vice-President); "Injuries by Violence," Mr. Pike (Hon. Sec.); "Necrosis," Mr. Mahonie (Hon. Treasurer); "Hæmorrhage," Mr. Stokes; "Exostosis," Mr. Drabble; after all of which, interesting discussions took place, in which most of the members joined.

EDINBURGH DENTAL HOSPITAL AND SCHOOL.

The Annual Meeting of the Directors of and Contributors to the Edinburgh Dental Hospital and School was held Jan. 24th, at the Hospital, 30, Chambers Street.

On the motion of Mr. W. Bowman M'Leod, Lord Provost Harrison took the chair.

The Office-bearers were re-elected.

In the list of directors, Mr. David Hepburn, long one of the dental surgeons of the hospital, has been elected in room of Dr. Charles Dycer, who had left Edinburgh.

Mr. Robertson (Hon. Secretary), read the report of the dental staff. It drew attention to the very great increase in the number of patients during the past year, there having been 2,478 males, and 3,120 females—total, 5,598. The conservative treatment of the teeth continued to receive the careful attention of the staff, and they had to report a steady increase in that department, the number of stoppings having been 561, as against 430 last year. The treasurer had much satisfaction in again calling attention to the fact that the patients at the hospital continued to take a healthy interest in the institution, and to record a sense of benefits by voluntarily bearing a share of the necessary expenses. Last year the sum subscribed by them amounted to £13. This year the sums received amount to £16 13s. That this source of income was showing a steady increase was peculiarly gratifying to the directors and the dental staff, and it ought to be an inducement to the public to liberally support the institution. The number of students was also on the increase, and their steady devotion to work, their marked success, and their sympathetic attention to patients, gave the staff much satisfaction.

The Chairman moved the adoption of the report, which, he said, was a satisfactory one in every respect. He congratulated the directors and contributors on the financial feature which was noted, and trusted that the institution would enjoy a career of even greater usefulness and prosperity than it had yet done. The community at large were under a debt of gratitude to the many professional gentlemen who took such a deep interest in the institution.

The report was approved.

Mr. W. Bowman McLeod, Hon. Treasurer, said the finances of the year stood on a firmer basis than even those of the year before. The amount of charge was £454 19s. 5d., and of discharge £449 9s. 3½d., leaving a balance of £5 10s. 1½d. due to the institution by the treasurer. The sums received in the shape of subscriptions, donations, and fees amounted to £112 10s. 7d.; and the hospital fees amounted to £128 8s. 3d. The general state of the funds was as follows:—Sum in account with the Commercial Bank, £214 3s. 9d.; balance due to the institution by the treasurer, £5 10s. 1½d.—total, £219 13s. 10½d., being a surplus to the good over that at this time last year of £76 12s. 1d.

On the motion of Councillor CLAPPERTON, who congratulated the meeting on the admirable and economical manner in which the institution was conducted, the treasurer's report was unanimously approved.

A vote of thanks to the chairman brought the meeting to a close.

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

(*Continued from p.* 141.)

Mr. MACLEOD continued:

The question of the judicious and injudicious extraction of these teeth is one which, however, permits exercise of judgment, and will, I have no doubt, evoke difference of opinion among our members. Speaking generally, I have no hesitation in extracting offending temporary teeth quite irrespective of the immediate or tardy eruption of their successors. To this general rule I would decidedly make an exception in favour of retaining the canine even at the expense of some pain to the little patient, or of threatened crowding of the incisor until such time as its permanent substitute showed active signs of eruption. I therefore occasionally extract the deciduous teeth to prevent irregularity; more frequently as the only *available* cure for toothache, and always when the tooth is the seat of abscess. I have not yet found many little angels possessed of that sufficiency of wisdom and patience necessary to endure the protracted, not to say irksome, treatment required to induce a healthy resolution. The practice recommended by another gentleman, viz., to remove as much of the pulp as possible, build up the crown and drill a hole into the pulp chamber, is a miserable make-shift, it certainly in many cases gives relief from pain by allowing the gases and pus to escape as they are generated, and so relieve tension, but it does not get rid of the disease. The suppuration still goes on, and the consequently oozing pus flows out continuously and is deposited in the stomach. The evil effects of this, it may be, tiny quantity of pus taken daily and unconsciously, may not be very marked in the case of robust children, who have plenty of food, freedom, and fresh air, but is most detrimental to the general health of the average child, producing malaise, fitful appetite, langour, and in some extreme cases pyæmia.

I have no fear of contraction of the jaw resulting from premature loss of the temporary teeth; a case in illustration, similar to the one mentioned by Dr. Kingsley. Before coming to the meeting, I measured two spaces in the mouth of a child. The left central was shed a year ago, at that time there was no appearance of its permanent successor, and only now is it showing signs of cutting, the right central is still in position, though slightly loose. The breadth of the two temporary teeth together measured four-tenths of an inch, the space between the laterals has now expanded to six-tenths of an inch. From the same mouth the first and second molars were extracted before the six year old molar appeared. The space between the six year old molar and the canine measures six-tenths of an inch, the distance between the canine and molar on the right side (the temporary molars being present) is just the same. We now come to the consideration of the permanent set, the only prominent question in connection with this is, which of the four teeth,—viz. the lateral, first, or second bicuspids, or first molar, should be extracted to make room for a crowded out canine? When I commenced practice, I, following the instructions of my preceptors, used to sacrifice the first molars; I have not done so for some years as I found—1st. That if left to Nature alone the result was never obtained; and 2nd. That the wearing of a regulation plate capping two or more of the teeth to prevent occlusion did not improve the teeth so capped; and 3rd. The pulling back of the two bicuspids was troublesome to both patient and dentist, and not always satisfactory in point of articulation. I now invariably sacrifice the lateral or first bicuspid, as the circumstances may determine. A law cannot be laid down in favour of either one or the other. Our own mother-wit, strengthened by experience, must guide our selection in each individual case, but of this I am certain, that the extraction of the first molar, *after the bicuspids have articulated,* will not allow the teeth anterior to it to travel backwards.

Here is a case which most emphatically bears out these views. (Models exhibited of upper and under denture.) The patient came to me three years ago, he was then a lad of fourteen years of age. Both canines were outside the arch; he wished the buck teeth removed; I advised the extraction of the first bicuspids. The first molar on the right side was denuded of its crown by caries, and abscess had formed at the roots and I further advised its extraction for its own sake. I took out the bicuspid on the left side and the molar on the right side. He promised to come back in six months' time and have the right bicuspid out; I saw no more of him till the other day, and these models show the result of the operation. The canine on the left side has fallen most beautifully into the place occupied previously by the first bicuspid. The canine on the right side is where it was three years ago, but the second molar has *travelled forward* the whole length of space of the first molar.

Mr. Amoore said he held the same opinion as that which Mr. Price had already expressed with regard to the space gained by the extraction of two bicuspids. He believed that their removal in the mouth of a patient of fourteen or fifteen years of age relieved the crowded or overlapping incisors from additional pressure from behind, yet, as far as he knew, the elasticity of the lip was insufficient to draw them backwards and so utilise the space gained, which became filled up by the pressure forwards from behind of the erupting second molars. He did not, of course, intend to say that the extraction of the bicuspids was useless to relieve pressure upon crowded and crushed incisors, but that the space so gained must be availed of by artificial means, and not left to nature, if the second molars were in the course of eruption at the time. In a regulation case, now under his treatment, the centrals were very projecting and overlapping, and to gain room, a sound first bicuspid on the one side and a decayed second on the other were removed. He had proceeded to draw in the prominent teeth without capping the molars, and the result was that in a short time the space was nearly closed not so much from the bringing in of the teeth from the front, but from the pressure forward of the erupting second molar from behind, and if it required some mechanical treatment in order that the space gained should be utilised, it was less likely that Nature would effect it alone and unaided.

(To be continued.)

The Anniversary Dinner of the Licentiates in Dental Surgery and the members of the Odonto-Chirurgical Society will take place on Thursday, March 13th, in the Balmona Hotel, Princes Street, Edinburgh.

Mr. Jno. S. Amoore, L.D.S.Eng., 7, Abercromby Place, Edinburgh, has been nominated for the Honorary Secretaryship, *vice* Mr. W. Finlayon, resigned.

APPOINTMENT.

Mr. Isidore Prager, L.D.S.I., has been elected Assistant House Surgeon to the National Dental Hospital, *vice* Mr. H. C. Carter, L.D.S.I., resigned.

SHEFFIELD ASSOCIATION OF LICENTIATES IN DENTAL SURGERY.

The following are the Officers of this Association:—

President.—Mr. Jos. Harrison, L.D.S.I.

Vice-Presidents.—Mr. Brindley, L D.S.I.; Mr. R. C N. Drabble, L.D.S.I.

Treasurer.—Mr. Mahonie, L.D.S.I.

Secretary.—Mr. Pike, L D.S.Eng., 273, Glossop Road, Sheffield.

BENEVOLENT FUND OF THE BRITISH DENTAL ASSOCIATION.

Further list of donations and annual subscriptions received up to February 12th, 1884:—

	Donations.	Ann. Subs.
Biggs, John A., Glasgow	£5 5 0	£1 1 0
Hinds, James, Coventry	—	1 1 0
Jackson, W., Crediton	0 10 0	—
Taplin, W. G., Hampstead Road	1 0 0	0 10 0

Donations and annual subscriptions to be sent to Alfred Woodhouse, Esq., Treasurer, 40, Leicester Square, W.C.

OAKLEY COLES, *Hon. Sec.*

Notices of Societies.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ANNUAL GENERAL MEETING, HELD JAN. 14TH, 1884.

JOHN WALKER, M.D., President, in the Chair.

THE minutes of the previous meeting having been read and confirmed, the PRESIDENT declared the ballot open for the election of the officers and Council for the ensuing year.

Messrs. William West and George Henry were then chosen, in the manner prescribed by the bye-laws to act as scrutineers of the ballot.

Mr. MORETON SMALE then showed models of a case in which the right upper canine had erupted into the right nostril. The patient, a girl, aged seventeen, applied to Dr. de Haviland Hall, at the Westminster Hospital, suffering from ozœna and general debility, the result of inherited syphilis. There was nothing specially interesting in the history of the case. She was admitted into the hospital, where her health greatly improved, and after keeping her under observation for a short time, the tooth was removed by

Dr. Walker. The temporary canines were present in the mouth. The case had been brought by Dr. Hall before the Medical Society of London, where it appeared to excite great interest.

Dr. WALKER remarked that it was difficult to imagine, without having seen the patient, how great a disfigurement was caused by this protruding tooth in the nostril. It was well implanted, appearing quite firm to the touch, though easily extracted with the forceps. The periosteum appeared quite healthy.

In reply to Mr. HUTCHINSON, Mr. SMALE said the tooth appeared to have given rise to no irritation whatever; there were no signs of periostitis or of abscess.

Mr. STOCKEN showed models of the upper and lower jaws of a man, aged forty, which were interesting on account of their remarkable size.

The PRESIDENT remarked that they were certainly very fully developed; he did not remember ever to have seen larger.

Mr. OAKLEY COLES asked whether the man had a large head, and whether he was of average intelligence.

Mr. STOCKEN replied that the patient had rather a small head and long narrow face, the size of the jaws being quite disproportionate. He was, however, certainly not deficient in intelligence.

The PRESIDENT then called upon the officers for the usual reports.

It was stated that museum specimens were much wanted.

The library was described as being in a very flourishing condition.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY GENERAL MEETING, HELD JAN. 21ST, 1884,

STORER BENNETT, Esq., F.R.C.S., President, in the Chair.

THE minutes of the previous meeting were read and confirmed.

Mr. Sexton was duly elected a member of the Society.

Mr. Parkinson presented a turtle's skull with horny plates.

Casual communications were received from Messrs. Fox and O'Meara, the former gentleman showing a dilacerated tooth, the latter a model in plaster.

The revised laws of the Society were then read by the Secretary, and considered highly satisfactory, and were formally approved of.

F. N. PEDLEY, Esq., M.R.C.S., L.D.S. (the Secretary), then read his report for the past year, which was listened to with much interest, and at the finish elicited great applause.

E. Latchmore, Esq., L.D.S. (the Treasurer), next read his report, which also gained great applause, when a balance of upwards of £27 was announced.

The accounts having been audited by Messrs. Buckland and Crowe were found correct.

A vote of thanks was passed to the proprietors of the several dental journals who have continued to send copies to the Society.

The election of officers, as proposed by the Council for the year 1884, took place next, which resulted as follows:—

President—C. Truman, Esq., M.A., M.R.C.S., &c.

Vice-Presidents—A. E. C. Woodhouse, Esq., M.R.C.S., L.D.S., E. Latchmore, Esq., L.D.S.

Treasurer—Mr. Buckland.

Secretaries—Messrs. Pedley and Stainer.

Council (Second Year Students)—Messrs. Ackland, Norris, Bardet, Parkinson, and Crocker. (First Year Students)—Messrs. Campion, England, Rilot, and O'Meara.

The President then called on Mr. Fox to read his paper on "Dentigerous Cysts."

A very spirited and interesting discussion followed in which the following gentlemen took part: the President, Messrs. Baldwin, Hern, Paterson and O'Meara. At the close of the discussion Mr. Fox replied.

A cordial vote of thanks was accorded to Mr. Fox for his paper.

The President, in delivering his Valedictory Address, made many appropriate and excellent remarks, and also threw out several very useful hints to the students, which were well received. At the close of his address, he wished the society a very happy and prosperous future.

Mr. C. Robbins, in proposing a vote of thanks to the President, took occasion to thank him for his kindness to the society and members generally. The vote of thanks was unanimously carried.

"INSTITUT ODONTOTECHNIQUE DE FRANCE" DENTAL SCHOOL AND CLINIQUE.

Consultants.

M. Gosselin Memb. of the Institut, Professor of Clinical Surgery at La Charité, &c.

M. Richet, Memb. of the Institut, Professor of Clinical Surgery at the Hôtel Dieu, late President of the Academy of Medicine.

M. Gavarret, O. Inspector-General of Medicine, formerly President and Member of Academy of Medicine.

M. Beclard, O. Dean of the Faculty of Medicine, Professor to the Faculty, Perpetual Secretary and Member of the Academy of Medicine.

M. Bouchardat, O. Professor of Faculty of Medicine and Member of Academy of Medicine.

M. Sappey, O. Professor to Faculty of Medicine and Member of Academy of Medicine.

M. Trélat, Professor of Clinical Surgery at the Hospital Necker, and Member of the Academy of Medicine.

M. Le Fort, Professor to the Faculty of Medicine and Surgeon to the Hôtel Dieu, Member of the Academy of Medicine.

M. Guyon, Professor to Faculty of Medicine, Surgeon to the Hospital Necker, Member of the Academy of Medicine.

M. Duplay, Professor to the Faculty of Medicine, and Surgeon to the Hospital Lariboisière, Member of the Academy of Medicine.

M. Fournier (Alfred), Professor to the Faculty of Medicine, and Physician to the Hospital Saint Louis, Member of the Academy of Medicine.

M. Bronardel, O. Professor to the Faculty of Medicine, Physician to the Hospital de la Pitié, Member of the Academy of Medicine.

COUNCIL OF ADMINISTRATION.

Dental Staff.

M. Audrieu, MD., Paris, President.

M. Colignon, M.D., Paris, Vice-President.

M. E. Brasseur, M.D., Paris, General Secretary.

M. Cregnier, Secretary of the Société Syndicale Odontologique de France, Secretary.

M. Damain, formerly Secretary of the Société Syndicale de France.

M. G. Gaillard, M.D., Paris, Treasurer.

M. Mt. Stevens, Doctor of Dental Medicine, and Surgery of London and Philadelphia.

M. Amyot, Dentist of Faculty of Paris.

M. Ducournan, Member of the Chamber of the Société Syndicale Odontologique.

M. Saussine, of the Faculty of Paris.

Teaching Staff.

M. Audrieu, M.D., Paris, Dentist to the Hôspital des Enfants Assistés and of La Maternité.

M. Colignon, M.D., Paris, Dentist.

M. Decandin, M.D , Paris, Ex-Interne.

M. Demontporcelet, M.D., Paris.

M. Du Bouchet, D.D.S., Phila., Dentist.

M. G. Gaillard, M.D. and Laureat of Paris, Dentist to the Dispensary of the Schools of the 1st Arrondissement.

M. Girand, M.D., Bordeaux, Dentist.

M. Goldenstein, M.D., Paris, Dentist.

M. Paulin, M.D., Paris, Dentist.

M. Ramonat, M.D., Paris, formerly Interne.

M. Saussine, M.D., Paris, Dentist.

M. Mt. Stevens, M.D. and D.D.S.Phila., L.D.S.Lond.

M. Viron, Chief Pharmacist at the Saltpetrière, &c.

CURATORS AND LIBRARIANS.

MM. Criquier and Vizioz.

The Institut Odontotechnique comprises—A dental school, a dental clinique, an odontological society.

At the dental school patients are seen gratuitously and the dental operations performed.

Demonstrations are given in the various methods of administering anæsthetics.

The "Revue Odontologique" is the official organ of the Institute.

The rules regulating admission, cost, &c., can be obtained by applying to the Secretary, or to Dr. Mordaunt Stevens, 42, Rue Cambon, Madeleine, Paris. The fee amounts to 760fr., or about £30.

Every branch of the professional career seems well provided for, and the names ot the teaching staff afford a guarantee of the efficiency of such instruction. There are several medals given to the most deserving students.

The prospectus now before us, but which is too lengthy for reproduction, affords much information, and will repay for the time spent in its perusal. The final page contains a print of the very handsome building situated in the Rue de l'Abbaye, in which the Institute carries on its classes, &c.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

A DENTAL CLUB.

To the Editor of the "British Journal of Dental Science."

SIR,—I have long thought of the necessity for a club in London where dental practitioners could resort to in the evenings with the certainty of their coming in contact with brother practitioners, and thus by social intercourse with its various members gain mutual advantages as regards the advancement of Dentistry. I feel, however, the desirability of *not* restricting the members to qualified men; all who carried on their profession in a respectable manner, and who were proposed by two members and successfully balloted for, should be admitted. I would just take this opportunity of saying that it is not by forming societies, in which qualified men only are eligible, that we can expect to advance our profession; there must be unity to have strength, and it appears to me, that if instead of shutting out unqualified men, we were to admit them, and by creating within them (if necessary) a desire to become more efficient, and by appealing altogether to their higher sense, make them of one mind, we should dispel a great deal of that spirit of animosity that exists at the present time in the profession, and which must ever be so long as it remain a hindrance to its advancement.

My suggestion is, then, this: The formation of a dental club in London, constantly open to members, where dental literature should be amply supplied. To hold "experience meetings" weekly. To hold regular clinics and demonstrations, thus giving members opportunities of bringing forward any new methods or inventions. And by the earnest desire of its members to keep up the dignity of the profession. I should, therefore, be glad to receive the names of all gentlemen who may be of the same mind as myself, and, if sufficient in number, a general meeting shall be arranged to form a committee of management, and so start the club in working order. The unqualified men will now have an opportunity of showing their appreciation of a general desire to elevate the profession by the formation of a club in which they should muster strongly. I am, &c.

W. V Ditcham, D.D.S., L.D.S., &c., &c.

Blackheath.

THE MANCHESTER DENTAL HOSPITAL,
98, GROSVENOR STREET, C.-ON-M., MANCHESTER.

Return for Six Months ending Jan. 22nd, 1884.

1883—1884.	No. of Patients.	No. of Operations.	No. Relieved.	Operns. under Gas.	No. of Stoppings.	Total.
July 23rd to Aug. 22nd	75	82	26	—	2	185
Aug. 23rd to Sept. 22nd	89	112	17	3	9	230
Sept. 23rd to Oct. 22nd	91	88	23	14	1	217
Oct. 23rd to Nov. 22nd	108	116	9	5	4	242
Nov. 23rd to Dec. 22nd	149	125	34	3	20	331
Dec. 23rd to Jan. 22nd	121	89	49	5	12	276
Totals . . .	633	612	158	30	48	1481

Number of patients of 14 years and under, 321.

Number of regulation cases, 101.

Thomas North, *Honorary Secretary.*

96, Bloomsbury, C.-on-M.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From January 1st to January 31st, 1884.

Extractions	Children under 14	449
	Adults	862
	Under Nitrous Oxide	414
Gold Stoppings		203
White Foil ditto		9
Plastic ditto		683
Irregularities of the Teeth treated mechanically		164
Miscellaneous Cases		405
Advice Cases		124
Total		3313

Harry L. Pillin, *House Surgeon.*

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL.

From January 1st to January 31st, 1884.

Number of Patients attended		1557
Extractions	Children under 14	479
,,	Adults	820
,,	Under Nitrous Oxide	282
Gold Stoppings		71
Other Stoppings		312
Advice and Scaling		209
Irregularities of the Teeth		62
Miscellaneous		153
Total		2388

Chas. W. Glassington, *House Surgeon.*

To Correspondents.

BOOKS AND PAPERS RECEIVED.

"Egyptian Gazette," "Correspondenz-Blatt für Zahnärzte," "Dental Office and Laboratory," "Pharmaceutical Journal and Transactions," "Dental Register," "Calender of Michigan Dental College," "Ohio State Journal," "Chemist and Druggist," "Woman" (an Oration, by Dr. Kingsley), "Concerning Records," (Dr. Parmele), "Penny Post," (Dunedin), "Dental Advertizer," "Items of Interest," "Scientific Californian," "Revue Odontologique," "Syllabus of College of Dentistry Univ. of California," "Dental Jairus," "Practical Dentist," "Dental Cosmos," "Le Progrés Dentaire," "L'Art Dentaire," "Pharmaceutical Journal," "Dental Record," "Report of Edinburgh Dental Hospital." "Lancet," "British Medical Journal."

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the British Journal of Dental Science.

British Journal of Dental Science.

No. 387. LONDON, MARCH 1, 1884. Vol. XXVII.

THE AFTER TREATMENT OF NARCOSIS DUE TO ANÆSTHETIC AGENTS.

By Dudley W. Buxton, M.D., B.S., M.R.C.P.

Although the agents which are now commonly in vogue differ very widely in their mode of action, yet they are susceptible of being grouped in small classes, when we consider the after effects consequent upon their exhibition.

There appear to be the following factors in determining the sequelæ of narcosis: (1.) The agent employed; (2.) The length of time during which it is exhibited; (3.) The personal susceptibility of the patient—i.e., life-idiosyncrasy; (4.) The state of health of the patient at the time of the administration of the anæsthetic; (5.) Sex and age of the patient; (6.) The previous habits of the patient—e.g., an established alcohol-toleration; (7.) Length of time the patient has fasted antecedent to the administration of the anæsthetic; (8.) The nature of the operation performed during anæsthesia—e.g., situation, as about anus, &c.—degree of shock, &c.

Although we have formulated these factors as if we could distinguish how each one contributed its quota towards the whole effect, yet to all who are at all conversant with the administration of anæsthetics it must at once be apparent that such distinction is more imaginary than real. We fail to eliminate the different agencies at work, and so cannot arrive at the effect which may be attributed to the residue.

It is the aim of this paper to consider only those epiphenomena which arise when consciousness is practically re-established, when at least, all attempt at "keeping the patient under" has been desisted from, the period having been reached when all endeavours are directed towards establishing recovery from the narcosis.

Vomiting, varying within wide limits as to its severity; prostration sometimes profound and almost amounting to collapse; syncope with a condition almost like catalepsy; hiccough, characterising a painful and very violent spasmodic contraction of the diaphragm; thirst, often very severe, and only controlled with great difficulty, are of very frequent occurrence. There are other sequelæ with which we shall have to deal, such as tracheitis, laryngitis, and even bronchitis, which are usually to be attributed to ether, and which, we are convinced, prove fatal in many more cases than statistics tend to show, since such patients are registered as having died from the secondary affection, viz., the tracheitis, or whatever it may be. Although anorexia is usually present, extreme hunger appears in some cases, more frequently perhaps taking the form of "food craving," although the stomach possibly may remain incontinent. Distressing headache, vertigo, both subjective and objective, occur, while the eye suffers both through inco-ordination of the ocular muscles and through variations in its refractive powers. Among the less important sequelæ of anæsthetic narcosis are: albuminuria, glycosuria, roselous eruptions, suppression of saliva or its opposite.

Vomiting occurs more frequently after chloroform administration than when ether is given, while it seldom occurs after nitrous oxide, although this re-agent will in a small percentage of cases cause sickness.

The patient is predisposed to vomiting by having a loaded stomach, more especially when the food taken has been imperfectly digested. In many cases fasting beyond four hours causes the vomiting, when, for example, a patient is anæsthetised before his breakfast. There can be no doubt that an injudicious haste in attempting to arouse the patient leads to vomiting, and so the assumption of the sitting or erect posture certainly tends to produce emesis.

It is difficult to estimate the effect of dosage of the anæsthetic agent employed on sickness, since in some patients vomiting supervenes long before narcosis has been attained, while in others huge doses do not excite more than nausea. When a very small dose of chloroform vapour is diluted with air, as was suggested years ago by Clover (and as is being rehabilitated in France in the guise of a novelty), there is in most cases less sickness during the production of anæsthesia and a less severe bout afterwards. Ether cannot be held as being far superior to chloroform, for even if it causes less sickness during the narcotising, its after stage is almost as frequently characterised by sickness as happens with chloroform. Children are sick more easily than adults, but, as a rule, the sickness passes off more quickly, but with delicate children it may cause some anxiety.

In elderly folks vomiting is perhaps less frequent, but when it occurs with any degree of persistence the outlook proves proportionately grave.

We have hinted that the posture of the patient is a matter of importance; the more horizontal the body is, the better; the head may be slightly raised by a small soft pillow, and during the sickness should be turned to one side, *not raised*, while care is taken that the tongue is well forward, and the neck as straight as possible. It is of the first importance that the vomit should be prevented from entering the larynx or lodging about the epiglottis; this is prevented by raising the hyoid bone, a manœuvre easily affected by elevating the lower jaw (the muscles attached to the maxilla and hyoid bone accomplish this) so that the larynx can be raised and placed well under cover of the cushion of the tongue. In many cases the first bout of sickness over, the worse is past, the patient sinks into a sleep and has little or no more inconvenience, but not so always—the vomiting may persist until the patient is completely exhausted. Absolute quiet, an easy but recumbent posture, may need to be supplemented by small does of bromide of potassium, or this drug combined with iced coffee, given black and in teaspoonful doses. The bromine of ammonia combined with some sal-volatile given in iced soda water is often useful. The severe thirst which so frequently accompanies excessive vomiting will often yield to ice, small lumps as large as a hazel nut being slowly sucked. It need hardly be said that no food or liquid of any kind should be permitted for several hours, for vomiting which has once yielded to the remedies mentioned above is liable to recur if the stomach is irritated by food or drink.

After from four to eight hours, according to the condition of the patient, food may be resumed. Iced broth, beef tea carefully freed from fat, soda with milk may be given in small quantities. Hot tea, a favourite request of patients, is pretty sure to excite vomiting, and so should be interdicted. When there is distressing retching without vomiting, frequent draughts, about a tablespoonful at a time, of water taken as hot as the mouth can tolerate it, will allay the retching and decrease the distressing nausea.

The question of giving stimulants is often a difficult one to decide. In cases in which ether has been given, we find brandy does little good, even when the pulse seems to indicate its use. Not so in chloroform narcosis. Brandy in one drachm doses in iced soda water frequently does good, but it should not be administered as routine practice, but only when there is collapse or tendency to syncopal seizures.

To promote reaction in those grave cases of semi-collapse, which may follow repeated inhalations of nitrous oxide gas, or ether, or chloroform, hot bottles should be applied to the feet and sides of body, while flannels wrung out in strong mustard* water be applied to soles of feet, precordium and pit of stomach. Although such cases look very alarming, and especially among the ill-nourished and aged are of grave augury, yet they usually do well, and when once reaction has been provoked, convalescence makes rapid and satisfactory progress.

ON THE SEAT AND TREATMENT OF RANULA.

By Dr. E. Sounenburg,

DOCENT AND FIRST ASSISTANT AT THE ROYAL CLINIC OF BERLIN.

(*Concluded from p.* 156.)

Pillaus (Traité d'anatomie topographique) who attributes the ordinary form of ranula to a change in the sublingual glands and their excretory ducts, explains the existence of the acute form by a sudden flow of mucous or saliva into Fleischmann's mucous sack, but he is in doubt as to whether this flow is due to a sudden rupture of Wharton's duct or of the excretory channel of the sublingual gland or to acute dropsy of the mucous sack itself. This I believe to be extremely unlikely and would still hold even for acute ranula, to the theory of Von Recklinghausen, though many points are not easily explained by it.

It is more difficult in those cases, where the ranula has attained a large size, to prove its possible origin or its relation to the Blandin Nuhn's glands. The various differences in the shapes and mode of growth may be considered to be intimately connected with the irregularities in the position of the glands in the tongue; and these irregularities are quite sufficient to explain many of these peculiar appearances.

I may also mention a second example which shows the connection of ranula with the Blandin Nuhn's glands. This was the case of a patient aged twenty-two, in whom there existed under the edge of the left half of the lower jaw, a tumour about the size of a pigeon's egg, which was not at all adherent to the skin. The swelling reached to the cavity of the mouth, and could be recognized in the floor of the mouth, to the left of the frœnum linguæ, and also partly to the right as a large cyst. Wharton's duct could be seen in the lower portion of that part of the tumour which extended to the mouth. The swelling also reached to the back of the mouth and presented a peculiar appendage, having somewhat the shape of a finger stall, which reached nearly to the epiglottis. This cyst also was exposed through an incision below the chin and extracted. The submaxillary gland was quite free and not in any way connected with the swelling. The mucous cyst did not extend to the front but only to the middle and posterior portions of the tongue; it had here partly displaced the muscular substance, but a very small portion only of the organ was included in the cyst.

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* Put the mustard flour into a muslin bag, soak in cold water, and then add this infusion to boiling water.

This case shows that notwithstanding the peculiar extension the ranula had taken, its connection with the glands of the tongue could still be assumed.

Further clinical observations will be required to fully establish the relation of these very large and peculiarly shaped forms of ranula with the glands of the tongue; several instances have come under my notice in which, notwithstanding a very extensive operation, I have not been able to discover any apparent connection. In such cases it must be assumed that in the course of the growth of the ranula, its attachment to the mother glands has become smaller and smaller, if it has not ceased to exist altogether.

Within a comparatively recent date Géhe ("Thèse de Paris," 1882) has written a monograph on cysts in the tongue, which is based on a case observed by Lanvelongue. He divides cysts in the tongue into serous, mucous, hydatid, and dermoid varieties. He refuses to include—and here, to my mind, he is quite in the wrong—ranula among the cysts in the tongue, for if, with Von Recklinghausen, we look upon ranula as a mucous cyst in the tongue—an assumption which, I think, I have strongly supported by clinical observation—we are justified in retaining the name of ranula, which has acquired a right of citizenship in surgical practice, for by it we mean a perfectly distinct and a clinically sharply defined group of mucous cysts.

It may also be asked whether we should gain any special guiding points for operating if we adopted this theory as to the anatomical seat of ranula. Ranula, it is well known, oftens recurs. The methods, which were formerly used for the cure of ranula, consist, with the exception of a few old unimportant processes, almost exclusively in the incision of the sack, or the incision of a portion of the wall of the cyst, or the extirpation of the whole cyst. Various forms of caustics have been tried, setons have been used, but experience has always showed that recurrences easily take place, and these have with reason been attributed to the incompleteness of the method of operation. Richet ("Gazette des Hopitaux," 1883, No. 45) considers it necessary, in order to prevent these recurrences, to fill the cyst with a pellet of cotton-wool steeped in chloride of zinc, which should be left in for forty-eight hours.

If we are persuaded that ranula is usually intimately connected with the glands of the tongue, we shall most likely attach more importance to carrying out the method of operation, not as formerly, by the resection of the wall of the cyst at the spot where it projects most, but in all those cases in which it is thought desirable to excise large portions of the cyst wall, by incising beyond Wharton's duct and then by resecting the whole of the cyst wall right into the tongue itself. If we have acquired the conviction that the cyst always grows from the glands of the tongue towards the floor of the mouth, it is plain we shall best succeed in curing the cyst, and in obtaining a permanent result if we incise the wall of the cyst at its very starting point. Ever since I have performed the operation by commencing the incision above, and carrying it along and parallel to Wharton's duct, and then after making the cyst wall as tense as possible, removed it from the substance of the tongue itself, I have, as a rule, obtained a permanent cure. On inserting the finger into the cavity, one sees at once that the cyst is to be reached in every direction, and that it lies quite open, and one is often enabled to introduce the finger or a flexible sound far into the substance of the tongue. It is not necessary in such cases to insert a drainage tube, as the cyst remains open and gaping one need not expect the disagreeable closure which used to be too difficult to avoid, and was too frequently the cause of recurrence.

The following method is recommended for making the excision sufficiently extensive. A curved needle is to be introduced, above and parallel to Wharton's duct, quite through the cyst wall, and the incision must not be commenced until the cyst has been well fixed by ligatures, introduced through the cyst wall up to, and even through the substance of the tongue itself.

If the excision is begun too soon, the contents escape and the complete excision of the front wall cannot be obtained, the cyst collapses too quickly. In consequence of this, the needles must be introduced right up to, or through the substance of the tongue, along the border of the cyst to mark out the line to be kept during the excision. This is then commenced by one cut, which is best made with a pair of straight scissors, and the incision is prolonged parallel with Wharton's duct. I have not found it necessary in such cases to make any further application, and as far as I have been able to follow the cases I have operated on, I only remember two, in which there was any recurrence. I attribute these to the circumstance that most probably too little of the cyst wall was removed, for at first I did not find the proper spot every time. Some practice is required before being able to decide how far and how close to the tongue substance the front wall must be removed. If the operation is performed below the Wharton's duct, a recurrence very easily occurs, for the lower portion only of the tumour empties itself. The edges of the wound soon close, a portion of the sack is obliterated, but the upper part soon gets refilled as it receives a further quantity of mucus from the glands of the tongue. I do not believe a drainage tube, even though left in position for a length of time, is likely to have any great effect.

The above process I would recommend as one of great value in the treatment of middle-sized ranulas. In those cases where the cyst is very large, it is better, of course, to perform the excision altogether from below the chin. As a rule, this is easily done, for the cyst-wall can always be separated without any difficulty from the mucous membrane of the mouth and surrounding parts. The drainage of a large-sized ranula as it used also formerly to be recommended, will also bring about a cure, but not so rapidly, and with far more unpleasantness to the patient.*

FACILITATING EXTRACTION BY A FRESH ADAPTATION OF FORCEPS AND MODE OF USING THEM.

By Gilbert Walker, L.D.S.Eng.

I am indebted for a discovery as new and as useful to myself as it has since been beneficial to my patients—partly to the consummate skill and partly to a failure of the late Mr. Evrard, who in 1879 made for me two pairs of lower molar stump forceps. I had merely requested them to have very narrow, sharp blades at a right angle to the handle, similar to his ordinary Hawks-bill, an instrument to which I was very partial for the extraction of lower molars. For the stumps of these teeth it was my unvarying custom to use the elevator; but I had become dissatisfied with it in operating under gas, as it did not grip the stump and bring it out of the mouth. It is true that in conjunction with the index finger it did do so, but I felt, perhaps, the forceps would be the safer instrument for such purpose.

Mr. Evrard, from his own knowledge, immensely improved upon the instructions given, by making the blades longer, thinner, and the opening of them at the upper part so broad that—to use his own words—"you may dig out a stump even though the crown be standing as a shell." The effect of this breadth at the top and meeting of the points of the blades was to make the angle formed by the outer parts of the blades very obtuse. The look of them was far from agreeable, but I had soon to own that it was one of the chief charms of an exquisitely-proportioned instrument. He also made them with the "pin" instead of the "circular" joint, a decided gain with such long blades.

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* Paper read before the Berliner Medicinische Gesellschaft.

I must confess I felt, as I expect a boy would with a new toy-gun, longing to try the new plaything but dreading that it might "go off wrong" and damage something, for the delicately thin blades gave no assurance of necessary strength. However, as at the first trial the stump moved beautifully, confidence increased. The second proved a tougher matter, and, as I had feared, the thin blades yielded; they did not break, but being somewhat soft, bent outwards in a gentle curve for about three sixteenths of an inch upwards, and the elevator had to finish the work they refused to do.

The disappointment was proportionate to the previous encouragement, but the desire for success remained. The second pair were often used and being better tempered did excellent service in picked cases, which suggested my attempting to re-temper the first pair—Mr. Evrard had ceased working. Confidence was again in the ascendant, and on using the re-tempered bent pair to a firm looking anterior stump of a lower molar, which was detached from its posterior, I was astonished to see—just as the blades had been forced into position and I was *about* to extract—that *both* stumps, merely attached by the periosteum, had *slid* into the forceps. I may here mention that it has long been my habit to press the blades of the forceps into a sponge charged with oil before using, with the idea that the oiled steel could be more certainly cleansed from contageous particles. Stump after stump, sometimes single and sometimes double, rose into the forceps, in like manner, on subsequent occasions, and confidence rose so rapidly that teeth were attempted and removed with equal ease; until one unlucky, abnormally-formed molar, declined to rise far from its socket; wringing it in the ordinary method of extraction proved too much for the amateurly tempered steel, and to my intense annoyance one blade gave way.

From the experience gained there could be no disputing that the peculiar combination of the convexity and concavity of the tips and the wide angle of the blades caused the teeth and stumps to slide into the forceps up the inclined planes of smooth steel, provided only that the forceps were forced down sufficiently far to pass the first bulb of the root; a matter by no means difficult, as the almost pointed thin blades readily passed within the alveolar margins and most probably slightly opened the socket, otherwise it would be difficult to explain how both stumps usually rise though only one is attempted; especially is this noticeable if there be but slight attachment. Probably also the oil may facilitate the process.

I dared not attempt to retemper the remaining pair of forceps, so ground the inside of their blades as nearly as possible to the shape of the accidental bend of the others, and from that day to this, with the exception of a long light pair of spoon-billed instruments for removing loose pieces, I doubt if any other forceps have been used by me for *lower teeth* or stumps, and my old favourite elevators are rarely needed.

It took some time to realise that *downward* motion was alone necessary with a pressure of the handles sufficient to cause the tooth to slide upwards, but that habit once acquired no further difficulties have been experienced and very few failures. Where an unusually firm or abnormally-shaped tooth is met with the grip is equal to the best adapted forceps, and practice warning what amount of force the instruments may be relied upon to bear, humouring accomplishes the rest.

So useful have I found this method of sliding teeth out instead of extracting them by muscular force that I have gradually used the one pair of instruments for *all* lower teeth, from wisdom to wisdom, and in gas cases have no hesitation in reversing the forceps in the hand and removing upper teeth and stumps as far back as the bicuspids. The position of the handles is a little awkward, and this difficulty has led me to try to design a pair of forceps for use in any part of the mouth, and I believe I have so far succeeded that I shall be able to remove any tooth—except the upper molars and even the stumps of those, when wholly or nearly separated —as well as, by the very shape and position of the new handles, having infinitely more power to press the blades home and control of the force altogether.

Although unable to say if this means of forcing or squeezing teeth up, by alone pressing forceps down, is, as a method, confined to myself; I can state that to the numerous friends and brother-practitioners, to whom I have shown it, it has been new, and I can only hope that the record of my own experience may induce others to try it systematically for themselves, the saving of lengthened pain to my patients having been so very marked and satisfactory.

INAUGURAL ADDRESS.*

By C. Truman, M.A., M.R.C.S., &c.

Gentlemen and Fellow Students,—It is your custom, each year, to elect one of the members of the staff to preside at your meetings. Your choice has this year fallen upon me. I thank you exceedingly for the great compliment you thus pay me. It is doubly a compliment, because, last year, when a deputation from this society waited upon me, proposing that I should be your president, I then refused your kind offer. It is only courteous that my reasons should be now explained to you. One was, my utter unworthiness; and this reason, I do assure you, has not decreased with the lapse of a year. Another was, my fear that I should not attend on the second Monday in each month, as regularly as your president should do. Lastly, on account of my name having, on a previous occasion, been brought forward as a candidate, after your committee had settled who was to fill the office. This naturally led to much unpleasantness. I feel sure, I need scarcely tell you, that this was done entirely without my knowledge or sanction, and had I been present, I should have been the first to censure the proposition.

We have to deplore the great loss we have all sustained in the retirement from the profession of one of our former presidents, Mr. Ken Underwood. His duties (and the qualifications which so well fitted him for those duties) were so numerous, his energy so great, and his goodwill so thorough, that it is difficult for us to realize all the posts which he has filled during the time he was amongst us. We know one thing very certainly—that, in his new sphere, he will fulfil all that is entrusted to his hands, skilfully, and to the pleasure of all those who come in contact with him, as he ever did during the whole time he was with us. We can only hope that the Prime Minister will make him a bishop at his earliest convenience. Being on the staff of one of the largest general hospitals in London, I am very much surprised to find how small an interest the medical students there take in our branch of surgery. They seem to imagine that dental surgery consists purely and simply in the extraction of teeth, and that the extraction of a tooth is the simplest operation in the world, requiring no previous practice, and that it can be performed by any one with the greatest ease. How great a mistake this is they discover when they get out into the world; having then themselves only to depend upon, they are forced to do what they have heretofore looked down upon. Again, if they practice their profession in India or any of our numerous colonies, or obtain appointments in the army or navy, they very soon find out what a help it would be to them to know a few of the rudiments of our speciality.

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* Delivered before the Students' Society of the Dental Hospital of London, at their ordinary general meeting, on Monday, Feb. 11th, 1884.

I hope, that during my year of office, the society will deem it expedient to have one of its pleasant evenings, soirée is, I think, the name you give to them. An evening of this description is such an excellent excuse for men living in the country to come up to town, and to have the enjoyment of seeing their old friends.

You will all find, that when you leave the hospital, and are scattered over the country (I may even say, over the world), that the opportunites of meeting your old fellow students, become fewer and less frequent each year. Therefore, remember those who are no longer working at this hospital, invite them to spend a few hours with you, and make the time of their stay pass as agreeably as you possibly can. With regard to the proceedings of the society, I think it would be better if the beginning and the end of our evening's programme were brought more prominently forward, I mean the casual communications and the discussion that follows the reading of the paper. It would be good if you related more of the cases you have seen at this, or any other hospital. It does not follow that because a few of you are well acquainted with a certain case, that therefore it will not be new to any of the members. Again, it seems to me, that you do not take sufficient notes of the cases you meet with in practice. It is not very much trouble for each of you to keep a small note-book in your pocket, to jot down at the time anything that strikes you as being interesting, and to amplify these notes when you get home.

Now the discussion of the views brought forward by the reader of the paper forms the most important part of the evening's work. All should try to take part in it, beginning at first by asking a question, proposing or seconding a proposition, until the novelty of hearing your own voice has passed away, and then your speeches will soon get longer. Although this is called the "Students' Society," the word student does not apply only to those gentlemen who are still working at the hospital. We are are all students as long as we live, and should always be on the look out for something to learn. It would not be possible to induce so many busy men to take hospital appointments, did they not feel, that by filling these posts they obtained a great additional field for the study of their profession. We are very pleased to see at our meetings, and to keep as members of the society as many as possible of those gentlemen, who, having finished their studies here, are still able and willing to join us. These members are a great help to the welfare of the society, being able to relate experiences extending over a longer period of time, thus giving more scope to the discussions, and also telling us of cases they may meet with in their private practice. But whilst recognising the great value of their presence amongst us, and thanking them for coming, we must not tresspass too much upon their good nature, and leave the whole weight of sustaining the debate upon their shoulders. We must all try to help to the best of our ability to uphold the high standard of the proceedings of the evening.

One of the reasons of our great prosperity for so long is due to our having secured the valuable services of Mr. Newland Pedley, our present secretary. No one could take more interest, or work harder in every way for us, than he does. This evening he comes forward to read for our advantage a paper on "Diseases of the Pulp." I remember, on another occasion, when a concert was given by you in this building, the year before last, one of the singers was prevented by an accident from fulfilling his engagement. His inability to appear was only known just before the concert commenced. What was to be done? Your committee was in a state of consternation. Some one jokingly proposed that the secretary should mount the platform, and take the place of the absentee. Mr. Pedley never hesitated a moment, but did his best towards helping you out of your difficulty, and sang remarkably well. I wish then, to thank him on behalf of us all, for the great services he has rendered, and for having always the good of this society so much at heart. As I have said before, its success depends upon each individual doing his best. We had a maxim up at Cambridge amongst the rowing men that the best way to win a race, was for every man in the eight to pull each stroke as though it was the last. Therefore, gentlemen, my advice to you is—always to pull together, and to row each stroke as though it was the last.

DR. HYDE, in Illinois "Dental Society Journal," says: "In 1862, Dr. Forbes said that he had heard that the teeth of the people of Europe were much better than in this country, and when he went over there, he took pains to observe. He was surprised to find the teeth of the poorer classes much worse than in this country. I found the same to be true in regard to the slaves in the South, when down there during the war. The assertions of inexperienced persons in regard to such matters are very little to be trusted."

THE EMPLOYMENT OF "NITROUS OXIDE" DURING SHORT OPERATIONS.

By John W. Miller, L.D.S.I.

While the use of nitrous oxide has been so long enjoyed by the dental profession as an anæsthetic agent during the performance of dental operations, I think the medical profession would do well if they had to resort to the employment of the above anæsthetic during the manipulation of short operations. By short operations I mean those that may be completed in the space of time which is available under the influence of nitrous oxide, in illustration of which I venture to record the following instance. On the 2nd of this month I had the opportunity of being present during an operation of the kind in question, and which was performed by Dr. A. C. Rayner, of Preston, the gas being administered by Mr. N. Miller, L.D.S., also of that town; this was for the removal of the body of the nail as far back as the root, from the thumb of the right hand. The patient inhaled the gas without any difficulty whatever, and was rendered unconscious in about 70 seconds, the operation was then proceeded with, and completed in 30 seconds later, when within another minute and a half the patient was restored to entire sensibility, thus the whole performance of the operation occupied only about three minutes. Had chloroform or any anæsthetic other than nitrous oxide been employed the time would have been increased tenfold, and would probably have been accompanied by a more or less subsequent prostration of the patient, which was entirely absent in the case just depicted. Therefore I think in my humble opinion, if nitrous oxide instead of chloroform, &c. were resorted to in such operations, that it would prove not only highly beneficial to the patient, but also greatly advantageous to the operator himself.

Hints.—In finishing approximal amalgam fillings, I first pack in the amalgam the same as in filling a crown cavity, then cut through with the back of a ribbon saw and finish by drawing a strip of rubber dam through. This leaves the filling contour perfectly smooth down to the jaw, and the space is so narrow no food can get in. The rubber should be drawn out sidewise and not lifted out at the cutting or grinding surface. Plates are often split by the expansion of blocks or plain teeth; when in contact, I strengthen plates at the joints by laying a piece of No. oo gold wire along the side of the pins next to the cutting edge of the teeth inserted.—U. M. Scott, in the *Ohio State Journal of Dental Science*.

COMPARATIVE DENTAL PATHOLOGY.

By John Bland Sutton,
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(*Continued from p.* 150.)

CHAPTER I.—MALFORMATIONS.

This chapter deals with anomalous forms of teeth, abnormalities in number, deviations in size, and irregularities in their position.

1. *Duplicity, or Fusion.*—The teratological series of the Museum of the College of Surgeons, London, (1), possesses an excellent example of this malformation in an elephant's tusk, which is double. Some have supposed this to be due to injury of the growing pulp, but I think this condition receives a ready explanation when we reflect that the papillæ of the skin are frequently double, and as teeth are modifications of similar papillæ, it seems strange that bifid teeth should be so infrequent.

Magitot (2) figures a case of fusion of two incisors of a horse; the specimen is in the museum at Alfort. It consists of a second left incisor, united with a supernumerary tooth. And at the last meeting of the Society, Mr. Wilson, of Edinburgh, exhibited a similar abnormality in the teeth of a frugivorus bat (*Pteropus*), the united teeth being also a lateral and a supernumerary incisor.

2. *Malformation from Injury.*—Worthy of attention are the spiral elephants' tusks deposited in the Museum of the College of Surgeons. These tusks, instead of presenting an uniform circumference, are spirally twisted, the twist possessing in some instances two or more turns, a deep groove starting from the basal portion of the tusk, and extending to its apex, clearly explains the cause of the malformation, viz., injury to the formative pulp when the tooth was in embryo, causing it to grow unequally. None of these malformed tusks attain to a great length. These tusks have been carefully described by Professor Flower (4).

3. *Abnormalities of Number.*—Variations in the number of the teeth of animals are encountered chiefly in the permanent dentition; indeed, concerning the milk teeth in all classes of animals, positive information is meagre.

Anomalies of number chiefly affect the molar teeth. Magitot records instances of supernumerary molars in the gorilla in three cases. The same author has met with additional molars, and, in one instance, an additional incisor in the spider-monkeys, also a supernumerary molar in a sapajou.

Dogs, too, are subject to additional teeth in the molar set. They have been encountered in the rabbit, and Blandford (3) has placed on record a supernumerary tooth in the case of a hyrax, an old female. "The extra tooth was situated at the posterior end of the molar series, on each side of the upper jaw."

Magitot has collected five examples from the horse of supernumerary incisors; the same anomaly has been met with in the sheep, and in the molar series of the sheep, and in a bullock.

Professor Flower has recorded an example in the seal. "It had a small molar in addition to the usual number of five, behind the last on the left side of the upper jaw, and another on the inner side of the fifth in the lower jaw, also on the left side, each being a miniature representative of the ordinary molar tooth."

I. Geoffroy Saint-Hilaire, in his "Anomalies de l'Organization," Tom. I, gives some interesting accounts of supernumerary teeth in horses, dogs, monkeys, and marsupials, affecting chiefly the molar teeth.

4. *Irregularities of Position.*—The museum at Alfort possesses a remarkable example of deviation in position. It is a skull of an adult horse, with a molar tooth situated at the base of the petrous portion of the temporal bone. The same museum also contains an example of a molar tooth in the cranial cavity of a horse killed at Alfort, 1849. According to the drawings given in Dr. Magitot's work (Plate ix, figs. 1, 2, 3), these abnormal teeth seem to occupy the posterior part of the space between the petrous and squamous portions of the right temporal bone. The mouth in both these cases contained the correct number of permanent teeth, consequently these abnormal ones were examples of supernumerary teeth. I think it would be better to regard teeth in this situation rather as examples of dermoid cysts containing teeth than as true examples of supernumerary teeth.

Professor Flower mentions two cases of irregularities in the position of teeth. The first concerns an orang. In this case the upper canine was in contact with the second molar, thus displacing the first molar forwards. The second case occurred in a vervet monkey. The lower canine lodged within the upper one, so that the apex of the tooth was received within a cavity in the alveolar border.

There is a specimen in the Museum of the Middlesex Hospital of the skull of a wild boar, in which the lower jaw having been broken had firmly united, but the two posterior molars of the left side are displaced inwards to the extent of half an inch. Magitot also figures the skull of a chimpanzee, in which the lower incisors close in front of the upper ones, such as occurs in certain specimens of fancy dogs, so commonly seen in this country—not the result of natural selection, but of a curious freak exhibited by dog-fanciers to perpetuate this deformity.

5. *Abnormalities of Direction.*—Professor Owen, in his "Odontography" (7), speaks of anomalies in the direction of elephants' tusks (Indian). "As when one tusk is horizontal, the other is vertical. The tusk of this animal is slightly moveable in its socket, and readily receives a new direction of growth from habitual pressure; this often causes distorted tusks in captive elephants, and Cuvier (26), relates the mode in which advantage was taken of the same impressibility, in order to rectify the growth of such tusks in an elephant kept at the Garden of Plants."

This mobility of the tusks in their sockets may explain the abnormal direction of the canines in the babirussa when kept in captivity. Several instances have occurred in which the curiously curved canines, from whence it takes its native name of "*deer hog*," have converged to the median line of the head, and, penetrating the hard skull, killed the animal.

During the past summer some very fine specimens of this animal arrived at the Zoological Gardens, where it was noticed that in one of them the teeth were adopting the course just described. The two canines had encountered one another in the median line, and extended themselves backwards in close contact, the opposed sides becoming flattened, and their apices were just entering the frontal bone, an indentation about a quarter of an inch deep was excavated in the tough skin. Fortunately the mischief was detected in time; the animal was thrown, and the aberrant tusks were shortened some two inches. It must be obvious that if this abnormal growth, or rather direction of the teeth, was common in the wild state all the best males would be exterminated; for it is certain that the more vigorous the male the more developed his tusks, and, to a certain extent, the greater his monopoly of the females. Is it not possible that when confined in a limited enclosure the creature rubs his tusks against the sides of his prison, thus impressing an abnormal direction to the growing tooth? That these animals do like to rub their heads in this way is attested in the following facts. A babirussa, previously captive in the Zoological Gardens, became so tamed that the keeper made a pet of it, and would play with the animal in its dwelling. One of the favourite habits of the creature was to rub its tusks against the keeper's legs, until they became as polished as an ivory ornament fresh from the turner's lathe. These teeth also took a false direction, and would have penetrated the beast's skull had they been permitted. Mr. A. D. Bartlett, to whom I am indebted for these facts, and who also allowed me to examine the polished fragments of the canines, found it necessary to remove from time to time portions from the extremities of the aberrant tusks. They were cut three times, the pieces removed measuring, on an average, an inch and a half each.

The most remarkable example of abnormality of direction taken by teeth that I am acquainted with is the specimen figured by Cheselden, in his "Osteographia," 1733, the original of which is in the Museum of the College of Surgeons. The specimen consists of the fore part of the lower jaw of a boar. It contains the incisors, canines, and premolars. The lower canines have from some reason or other grown excessively, turned backwards, and re-entered the mouth by piercing the integument and the substance of the jaw itself. The right tusk has tunnelled the bone for a distance of about 3in. and reappeared on the floor of the mouth near the symphysis. The left tusk, after re-entering the mouth, seems to have passed across the buccal cavity, so that its apex is resting on the inner side of the right lower jaw.

The Museum of the Odontological Society possesses some interesting examples of tusks of the hippopotamus, which have formed a circle, and in one instance the point of a tooth has re-entered the pulp chamber. This specimen is the one figured in Tomes' "System of Dental Surgery" (27).

There are several other examples in the same museum of overgrown and curved teeth of rodents which have lost their antagonists. These specimens are chiefly from rabbits.

(To be continued.)

We believe it is a Chinese usage that the doctor shall undertake not to cure disease but to keep the family in health. Surely a practical suggestion to dental surgeons is, that they should undertake to keep the family teeth in health—a plan feasible and likely to save both patient and dentist trouble.

The irregularity of over crowding of the front under teeth in childhood is not such an evil as is often assumed. It is seldom they become decayed from overcrowding, and the irregularity generally "takes care of itself." They may not entirely straighten themselves, but will generally sufficiently "come into time" to obliterate any dissight. Yet we have known Dentists to extract bicuspid teeth, and even cuspid teeth, to give these front teeth room. It is almost always a failure, and sometimes a positive injury to the after symmetry of the features.—*Items of Interest.*

DISEASES OF PULP.*

By Mr. Newland Pedley, M.R.C.S. and L.D.S.Eng.

Mr. President and Gentlemen,—It is one of the duties of the secretaries to provide papers for the meetings, and when we were unable to secure the promise of one for this month, I undertook to make it myself. But it was in a weak and unguarded moment, for I could not have believed that it was so difficult a matter to find a subject worthy of my audience; so, in bitterness of spirit, I determined to attack the most hackneyed and out-written of all subjects, viz., "Diseases of Pulp." Ignoring extracts from books, and only trusting to my own knowledge and convictions, I hoped that I should only have to open the subject with trite remarks, and that you would rush to the rescue, embellishing my paper with the true artistic merit of your original ideas.

Adopting the usual classification, I will commence with "Irritation of Pulp," so often the result of fracture of a tooth, or the commencement of caries, and yielding to the treatment of nitrate of silver, or other caustics. In this we recognize a beautiful physiological experiment that has done more to explain the nature of the sensitiveness of dentine than the strongest lenses of the microscope. Sparing you tedious extracts from the writings of Klein, Boll, Magitot, Coleman and Tomes, I will consider it proved that the indental tubes contain sensory filaments, and that close to the surface of the tooth there is a very sensitive layer of tissue What the nervous structure of that layer is, no one has attempted to describe. We know that the terminations of certain nerves are more sensitive than their trunks, and we argue, by analogy, that there is probably hidden in the granular layer of dentine, a system of sensory end organs, as highly specialized and as elaborate in structure as the Schneiderian membrane in the nose, the retina in the eye, and the gustatory bulbs in the tongue. The great practical deduction that must excuse so much theory is, that we should not disregard even peripheral sensitiveness in a tooth, for fear it may give rise to inflammation of pulp.

This *second* disease is unmistakable in its nature,—with the darting pain that so frequently occurs with each throb of the heart, and aptly illustrates the theory that increased tension is the origin of the pain. Inflammation of all soft parts is accompanied by swelling, the result of effusion of the fluid contents of the vessels; and provided the inflamed tissue can swell, there need be no great pain, because the nerves are not pressed upon; but the pulp cannot expand much on account of its bony surroundings, and hence the intolerable pain and rapid destruction of an organ which is crushed to death by the pressure of its own effusions. In this respect the pulp of the tooth suffers in the same way as the eye in glacoma, where the whole nervous mechanism is rapidly destroyed by the mere tension of the eyeball.

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* Read before the Ordinary General Meeting of the Students' Society of the Dental Hospital of London, on Monday, Feb. 11th, 1884.

The operative treatment of acute inflammation of the pulp is at best unsatisfactory. In the very earliest stages of the disease, the local application of carbolic acid, or oil of cloves, and the protection of the organ by means of a stopping, may control the inflammation, but in the severer forms we are quite unable to cope with the condition of increased tension. Obviously a free incision into the inflamed organ is impracticable, and we have but a very faulty substitute for it in Rizodontrophy, where we drill a hole into the tooth, and leave it open as a vent. The greatest relief is given at the time, but a permanent fistula remains, which cannot be closed. There is no reason, however, why we should so frequently neglect to avail ourselves of the use of drastic purgatives, and I have frequently seen the best possible result follow the exhibition of a good pill.

Under this treatment inflammation may subside, and the tooth may be filled with every rational prospect of success. If, however, the pain has been severely felt for a period of half an hour, or if it has recurred at intervals, I am always prepared to find that the pulp has begun to undergo degenerative changes. Hence, I make it a rule to destroy the pulps of all teeth that come to me with exposure, or which have ached for a protracted period.

I am aware that in making this admission I run the risk of being stigmatised as an unscientific Dentist, and I fear it is expected of me that I should follow the text books in dividing up the degenerative changes of the pulp into suppuration, ulceration, sphacelus, gangrene, &c. But I at once admit that I attach no practical importance to all these pathological distinctions as far as treatment is concerned, and the treatment is arsenious acid in some form. All the massive literature compiled by transcendental specialists, bent on outvying one another, will have difficulty in furnishing a better specimen of crass empty verbosity than much that has been written on the subject of "Treatment of Exposed Pulp." The most accurate instructions are given us for each particular stage in the disease, but it is much to be regretted that in a large proportion of the cases we have no possible means of ascertaining what condition the pulp is in.

(*To be continued.*)

INAUGURAL ADDRESS.*

By J. Smith Turner, M.R.C.S. and L.D.S.Eng.

Gentlemen,—I have to thank you for the great honour you have conferred upon me in making me President of your society. In accepting this honour at your hands, I have not been free from the apprehensions of failure which attend the acceptance of any onerous position, and if I had followed the bent of my own inclinations I gladly would have made way for some one better fitted for the office. But I also felt the value of your good opinion, and if I had refused to accept this expression of good feeling towards me, and your confidence in me as a worthy recipient of this honour, I should have shown a want of courtesy, and have been guilty of something very like ingratitude. More especially is your spontaneous expression of confidence gratifying and valuable to me when I look back upon the last two years in the history of our profession; for I well know that when a man fights for a principle, and fights to win, he may unwittingly give offence where he least wished, and where he least meant to have given it. Your conduct towards me has served greatly to dissipate this fear; and has shown me that, even if offence has been given, resentment has not passed within the serene circle of the Odontological Society.

I believe that this society has acted wisely and well in avoiding politics, and I have always looked upon it as the happy neutral ground in which the hatchet might be buried, and where we might tread the green pastures of peace.

Once in its history as our society deviated from this strictly neutral course, and even then it may be said to have been more in an educational than in a strictly political aspect, although the legitimate outcome of that step is the present position of the dental profession. Twenty-five years ago the council of the society induced the council of the Royal College of Surgeons to grant a special examination, and a special diploma, in dental surgery. Since that time, with a calm confidence in the wisdom of that step, and in the fulness of the provision thus made for providing the public with competent and educated dentists, and with a patient waiting for the harvest of the seed then sown, it has avoided active interference in the course of events, and been contented to show the members of the profession what they might be, what they ought to be, and what I believe they all will be ere long.

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* Delivered before the Odontological Society of Great Britain, Monday, Feb. 4th, 1884.

We are not, then, a political society; neither, let me add, are we a teaching society. We do not seek to usurp the functions of any school, neither do we seek to patronise one school at the expense of another. We leave the education of the profession to the care of those whose call is to teach pupils, and to reward the diligent. This society is composed of men who have passed the stage of pupilage, men who have appropriated and digested the teaching of the schools, and who meet together to propound and discuss their opinions and methods. In short, our society has two well-defined aspects, scientific and social, and in those two conditions we find ample scope for usefulness, and to my mind irresistible claims on the support of the profession at large.

Dentistry is no doubt an intricate and complicated art, and it is to the practice of this art in all its complexity that we devote our ability and strength and time, and in so doing we are liable to be absorbed in our immediate occupation, and mentally to slip away from and to forget the science on which our art is built. Such an occurrence can have but one result. It must dwarf and narrow the intellect, and bring its operation within a limited circle, making men of one idea and one accomplishment. We apply ourselves with commendable ardour to meeting the difficulties of our calling, and as step by step each difficulty is overcome, we begin to marvel at our success, and to think that plugging a tooth is the very acme of human intelligence and dexterity. And so we work and wonder, and then perhaps we call others to wonder with us, and go on wondering more and more.

> "Like Katerfelto, with his hair on end
> At his own wonders, wondering for his bread."

Now our society draws us out of this circus horse canter. It reminds us that there are hills beyond Ben Primrose, and streams beyond the busy Thames. It keeps us alive to the too oft forgotten conditions which exist around us in our everyday practice; of the dangers and pitfalls which await the most skilful, and which abound for the most self-satisfied operator. It impresses on our minds those physiological and pathological conditions which art cannot teach, and which it so often fails to alter or to control. This society quickens our apprehension of such things, and compels us to remember that in our daily work we are hourly in contact with, if not the unknowable, at least the unknown, and that it is only by a devout and patient use of the light flowing from the lamp which science holds up to us that we can ever emerge from that darkness which art alone can never remove. And so in the operative part of our art we are reminded by discussion and experience that the materials which we use have their scientific peculiarities and their scientific applications, and that the useful pieces of mechanism which we prepare for our patients must be built up and completed under the light of science; otherwise we only produce a species of workroom Dentistry distressing to look upon, distressing to wear, and discreditable to ourselves.

In this society I see a scientific centre for Dentistry in our country. It is the spot where thought and enlightenment and progress are recorded and made permanent, and from which they are diffused abroad for the benefit of all who care to partake of them. It is the scientific home of our profession, where the works of past ages are stored and arranged for the use of ages to come.

In our museum we have a collection of preparations and specimens and appliances of special interest to the Dentist, and for completeness unsurpassed by any collection of a similar kind. In our library is to be found a copy of every worthy modern work on Dentistry, besides a store of ancient literature embracing everything that can be of use or interest to the dental student or the dental practitioner, and also a full assortment of the general medical and surgical text-books of the day. And whatever others say or feel in reference to our profession, I, for one, am proud to be a humble member of a body which has done so much for itself, without endowment or without fees of any kind, but solely through the energy and liberality of its members. We know that certain societies have their libraries, but I doubt if any private society of professional men can show a museum such as ours. The Royal College of Surgeons has been fortunate in its inheritance of a magnificent collection of pathological and anatomical specimens, and right well has it cared for it and added to it, and made it available for the professional public. But the college is a corporation drawing yearly a large revenue from its privilege of dispensing diplomas. We, as I have said, have no such revenue, and yet we have managed to do this much for ourselves. Surely if, in the early part of our career, we have done so much, we ought to be able to do still more in the future; and if we wish to emulate the past, the future is still ours in which we may do it. Meanwhile, through the course pursued by the founders of the Odontological Society, and the action of succeeding councils, Dentistry has achieved a distinct position in the scientific world—a position which has been, and so far is still being, worthily upheld by its members.

(*To be continued.*)

British Journal of Dental Science.

LONDON, MARCH 1, 1884.

THE ROYAL COLLEGE OF SURGEONS AND THE L.D.S.

At the present time that august body, the Royal College of Surgeons of England, is in the throes and agonies which attend upon revolutions. All dental surgeons, many of whom are Members or Fellows of the College, readily confess how behoven the profession is to the College; but while they recognise the boon, they also perceive that much more might be done on their behalf by the College.

The registrable qualification which establishes the dentist's status is a great advantage to the profession, although it does not perhaps carry quite so much weight as some would have us to believe. But if one has been at the pains of going through the somewhat severe test, then surely there should be more actual value in the qualification granted. It would seem only fair that Dental Licientiates should be protected by the College to which their fees are paid and through whose portals they are to commence their professional career. At the present time the College is about to reconsider its charters, and if need be, to recast the method it pursues, and remodel its social and educational systems. It would appear then that at such a time it would be well if the leaders of the profession, among whom we see names as widely cosmopolitan and as deservedly revered as any other special branch of the surgeon's art can produce, should strive to have the whole relation between the College of Surgeons, if not recast, at least so far modified as to meet the necessities of the present aspect of affairs and of the requirements of the dental practitioners of to-day. Perhaps in no section of surgery has more alteration been made within the past few years than in the practice of Dentistry. This change has been not only one showing a daily tendency towards more cultivation and the adoption of more scientific methods and opinions, but has affected alike the social status of surgeons practising Dentistry, and has further done much to enhance the good opinion which the outside public extends towards *bona fide* dentists. Yet at present little or no increased privileges or protection have been accorded by the College of Surgeons. We were told only the other day that the College had no power to check advertizing among its licentiates. There can be no doubt that, as far as this goes, it is true, since licentiates occupy quite an anomalous position, and one which should no longer be tolerated. In the case of members and fellows matters are quite otherwise. Although the College shows a marked reluctance to move when any member of its body is at fault, yet sufficient cases exist to establish a precedent and of showing that it can when goaded into it, assert its authority and chastise iniquity.

There are many who will say that the difficulty may be met by making everyone who holds the L.D.S. also hold the M.R.C.S.—we cannot go this length. It would recommend itself far more to us, were all licentiates in dental surgery to be placed upon a par with members, and were a special charter required, that such a charter should be agitated for, and no stone be left unturned until it were obtained. If a committee of influential practitioners composed of tried men in whom the profession repose confidence, were to carefully consider the relations now subsisting between the College and the Profession, and were to delegate some of their number—members or fellows—to represent their views, at all meetings of the members and fellows of the College of Surgeons, some good might accrue. Of one thing we may be certain, that the council will not undertake any sweeping changes without affording ample opportunity for ventilation among the fellows and members, so that such a committee as we have suggested, must have ample scope afforded them for the formulating their decisions and bringing them before the executive. At present it seems doubtful when the Medical Bill will come before the House of Commons for consideration, but when it does so, its provisions should be carefully scanned; and, as far as practical, the field of its application should be extended so as to include Dentists. Perhaps what is most needed in the ranks of dental practitioners is *esprit de corp*, a willingness to sink the personal in the welfare of the body corporate, and by striving all together to achieve reforms and privileges which benefit one and all. The programme which the Association has set itself, almost shuts the door upon its originating any work of the nature sketched above, since the most absolute freedom from bias and preconceived ideas could alone invest the committee with the confidence of the whole profession. It would also be a manifest misfortune to allow even the smallest loophole for dentists to creep through to avoid joining in a professional appeal, such as could alone influence either the Houses of Parliament or the Council of the Royal College of Surgeons.

MIDLAND ODONTOLOGICAL SOCIETY.—This society is now inaugurated with an influential staff of officers and council, and will hold its first ordinary meeting on April 3rd, at the Medical Institute, Edmund Street, Birmingham, at 7 p.m., where it will meet in future on the first Thursday of each month from October to May. It is gratifying, as well as most hopeful for the society's future, to see by the granting of the use of the rooms of the Medical Institute, the fraternal accord existing between the members of the medical profession and the dental surgeons of Birmingham. This, coupled with the fact that the first president (Thomas Howkins) is an M.R.C.S.Eng., goes far to prove that the elevation of the dental, to the level of the medical profession is the object this society has in view.

RAPID DECAY OF THE TEETH OF YOUNG MOTHERS.—Dr. Naismith writes, "It is quite a common occurrence for young mothers to complain of the rapid decay of their teeth. This is no doubt caused by the abstraction of lime from the mother's blood to form the bones of the fœtus. Hence the craving for chalk and kindred substances. How would it do to prescribe phosphate and carbonate of lime regularly for pregnant females to make up the deficiency?"

SINGULAR DEATH AT COATBRIDGE.—The sudden death of a man named Samuel Pollock, thirty six years of age, a labourer, who resided in Low Coats, Coatbridge, was recently reported to the police. On Tuesday week the deceased got a tooth extracted at Coatbridge, and since then he complained of a pain in the head at the right ear. He got worse on Friday night, and about 12 o'clock on Saturday his landlady gave him two spoonfuls of whiskey. About fifteen minutes afterwards she entered the room with Dr. Tudhope, of Coatbridge, and Pollock was found to be dead.

The above extraordinary affair, for the account of which we are indebted to the "Scotsman," must excite some anxiety amongst all dental practitioners, and we trust we may be able to place further particulars in our readers hands, which may elucidate this most melancholy episode.

A NEW ANTISEPTIC.—The "Dental Register" speaks highly of a new antiseptic which starts its career under the fanciful name of Listerine. It is said to combine the antiseptic properties of thyme, eucalyptus, baptisia, gaultheria mentha arvensis, and benzo-boracic acid. This mixture is odourless and does not destroy fabric, while it is stated to possess undeniable powers as a germicide. In America it has been largely used by dental and general surgeons, and has been found to be highly satisfactory. It is beneficial, we are told, either internally or externally, it checks fermentation and so is useful for allaying the water brash which is so prejudicial to teeth. For affections of the throat it is an excellent gargle; it is also valuable as a wash for various conditions of the mouth. In the treatment of the ordinary diseases of the antrum it is one of the most efficient preparations. The statement that it is a very effective disinfectant and antiseptic, alike practicable for internal and external uses, and of great value in dental practice, should be sufficient to induce every one to make a trial of it.

A NEW METHOD OF FINISHING FILLINGS.—The finishing of gold fillings, and especially of approximal surfaces, is very easily accomplished after they have been properly prepared from abrasive disks. Take strips of Japanese bibulous paper, from one half to an inch wide by four or five long, sprinkle the surface with precipitated chalk, fold the material two or three times to retain the chalk in place, then twist the paper into a string and use it as a finishing tape. This makes one of the finest finishing materials and can be used even when the teeth are in the closest proximity.—*Dental Cosmos.*

THE INVENTOR OF THE RUBBER DAM.—Mr. S. C. Barnum, whose name is so well known both here and in America in connection with the use of the rubber dam, has been so ill as to prevent him from pursuing his profession. To meet this sad mishap it was proposed that his American colleagues should raise a subscription on his behalf. But Mr. Barnum, in a most manly letter, courteously but firmly declines all eleemosynary aid. He writes: "It is a very delicate matter to decline a pecuniary testimonial. One is liable to lay oneself open to the charge of false pride; but I hope my friends will not so misjudge me."

TEST FOR PURITY OF CARBOLIC ACID.—W. Meyke, in the course of some careful experiments ("Phar. Zeit. Russl.") formulates his results thus: Experiments, 1. Pure carbolic acid should be colourless, have the proper boiling point, and be entirely volatilized by heat. 2. The congealing point is of secondary importance. 3. Carbolic acid is coloured red when kept in glass vessels containing lead. 4. The best vessels for keeping carbolic acid are made of tinned sheet iron.

THE PRESERVATIVE "REX MAGNUS."—We learn from "Science" that this preparation consists of: boracic acid, borax, 67 per cent.; potassium chloride, 15 per cent.; water, 18 per cent. It is reputed that it will keep meat or fish sweet for a time, but when the superficies is greater than the thickness, there is some loss of flavour. Might this not be turned to account in dental practice?

MUTILATIONS OF THE TEETH.—Ethnographers who have minutely described mutilations of the teeth in other parts of the world, have said nothing of a similar practice among the natives of the two Americas. The practice is not common in the Western World; and it is a little singular that people who deform to an extraordinary degree their lips, noses, cheeks, and ears, respect the integrity of their teeth. The historians of this practice overlook the abrasions noticed by Vancouver among the Indians of Trinidad Bay, and by Petitot among the Tchiglits at the mouth of the Mackenzie and of the Anderson. Finally, no notice is taken of dental mutilations formerly in use in Mexico and Yucacan, upon which Sahagun, Landa, and Mota Padilla, have furnished information. M. Hamay has gathered from the last-named writers their allusions to these subjects, and prepared an illustrated monograph. The drawings indicate both filing and perforations.—*Bull soc. anthrop. Paris, v.* 879.

In the December No. of the "Missouri Dental Journal" we regret to find the following: "This number of the Journal closes the fifteenth consecutive volume of its existence, and is the last that will be issued for the present. It pains us greatly to make this announcement, for we have used our best endeavours to give the dental profession of the West a first-class journal, devoted especially to their interests, feeling that such an organ should and would meet with proper encouragement at the hands of those in whose behalf it was labouring." The editor further extends thanks to all who have in anywise contributed to the support of the journal. This step on the part of the editors and publishers will be a matter of regret. We have ever looked with interest and pleasure to the monthly coming of the "Missouri Journal," for it always contained profitable matter.

TOOTH SYRINGE.—A really good cavity syringe has always been difficult to obtain, those made of glass with metal settings are often found deficient, they contain too little water, they are difficult to hold, and slip easily out of the hand, if the tube breaks it is difficult to get another to fit. Until now they have also been very costly, especially in England, where the price is 15s., when in Berlin they might be had for 7 marks 50 (7s. 6d.) The reason for this high price may be that we have not gone to the right source. As everyone knows, instrument makers have their specialities—one prepares glass, another tongs, another syringes, &c.—and till now we have not gone to a specialist, where we could get good work at a low price. Gesell Brothers, Berlin, have prepared a syringe which has a glass cylinder with nickel metal settings and a screwed tube. There are two rings on a metal band to hold it. The work is excellent, the glass cylinder is screwed in at both ends, so that in case of an accident a second cylinder can be readily substituted. This syringe is produced at a most moderate price.

AMERICAN DENTAL COLLEGES.—In the list of American colleges which we published in our last issue, Harvard college was omitted. We need hardly say that this college stands very high, its reputation being as high in England as it is across the Atlantic.

WE notice in the pages of a contemporary that Dr. Forbes Winslow, M.R.C.S., has been appointed an administrator of anæsthetics to the National Dental Hospital. We believe Dr. Winslow also pursues the lunacy branch of the healing art.

Erratum.—In the notice of Mr. Gaddes book on page 179, "formative quantity," should read, "form and quantity." This printer's error does not in any way affect our reviewer's remark, as to the want of perspicuity in the sentence quoted. It may be added that the word "elaborating," in the last line of the paragraph, should be read "elaborates," the sense being the same.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

THE PATENT POCKET COMBINATION RUBBER STAMP, PEN, AND PENCIL CASE.

Mr. Josiah Ritchie has introduced to our notice an exceedingly ingenious combination of a rubber stamp with inking apparatus and pen and pencil. It is a nickel-plated holder that can be carried in the waistcoat pocket, having at one end the ordinary propelling pen and pencil, but at the other a little flat box neatly closing up and forming a continuation of the holder. One side of this box forms the ink pad for the rubber letters to rest upon when closed, keeping the stamp always ready for instant use. This opened, the other side of the box with the rubber-stamp affixed, turns upon central pivots, and so becomes transverse to the handle and ready for use. The pivots being easy admit of the stamp finding its own level when pressed upon a flat surface and so prints evenly. The box is about an inch long, and sufficiently wide to carry three lines of rubber type, enough for any ordinary name and address. It combines elegance, utility and cleanliness. Of course designs or monograms can be as easily inserted as letters if ordered.

INDIA-RUBBER AND BRISTLE TOOTH-BRUSH.

Messrs. Maw, Son, and Thompson, of Aldersgate Street, have patented a tooth-brush, which they call the "I. R. & B. Tooth-brush." It is of ordinary form, but has, all round outside the bristles, a single row of little columns of vulcanized india-rubber, as long as, and in the place of, the outer row of bristles. This combination gives in use a beautifully soft edge to protect tender gums whilst leaving the bristles—which may be stiff—free to cleanse the teeth thoroughly. The india-rubber row seems well calculated also to prevent the breaking of the bristles whilst being used on irregular or the straggling teeth of elderly people.

THE "MERMAID" MODELLING COMPOSITION.

The "Mermaid" Manufacturing Company have brought out a modelling composition, for art purposes—but equally useful for mouth impressions—somewhat resembling the "Stents" or "Godiva" composition, for which they claim that it becomes beautifully soft in moderately hot water, takes impressions both sharp and defined, sets in the mouth in from 60 to 90 seconds, and when placed in cold water hardens immediately without cracking or shrinking; that it requires very little kneading before using, and can be heated and set aside any number of times without deterioration, and some specimens sent that had been used over a year certainly bears out the statement. It can be obtained at most Depôts.

MARKING STEEL.

An easy method for marking steel, brass, silver, or perhaps any metal, is to apply a thin coating of beeswax over the part designed for marking; this is done by heating the article sufficiently to melt the wax, which should be quickly passed over the surface. If not convenient to heat the article, rub the wax over it and smooth with a heated knife-blade. When cold, write or mark with a stiletto whatever is desired, and over that apply nitro-muriatic acid with a feather, sufficient to fill the grooves in the wax; after fifteen or twenty minutes wash with a strong solution of sal-soda and remove the wax, when it will be found that the writing or marking is neatly cut into the metal.

PLASTER MODELS.

The attention drawn to the importance of museum specimens by Mr. Coleman's letters and the recent appeal from the curator of the Odontological Society's museum, make the following note important. We are indebted to the "Independent Practitioner" for the method suggested below: Models of rare cases that it is desirable to preserve, should be made of the best plaster-of-paris, mixed with a concentrated solution of borax. They should be dried with care, and then put in a bath of paraffin coloured with dragons blood. The model thus prepared has the appearance of handsome Italian marble, and it may be cleaned and washed without injury. To increase the translucency more borax may be used. To make a very hard model the plaster should be mixed with lime water, but such casts are not suitable for vulcanising. To increase the hardness of an already prepared cast it should be boiled in a strong solution of alum.

A NEW CLAMP.

A RUBBER DAM CLAMP, devised and constructed by Dr. J. P. Carmichael, of Milwaukee, has been highly praised in America. It is a double clamp, the jaws of which consist of ten small steel plates, so hinged together as to make it adjustable, with a large range of adaptation, so that it fits accurately upon a tooth of any shape. It comes nearer being a universal clamp than anything yet presented to the profession. About three of these clamps, varying in size, would meet all cases so far as the shape and size of the teeth are concerned. It is invaluable in many cases, and is obtainable of dealers in dental supplies.

Abstracts of Foreign Journals.

(Continued from p. 171.)

DEUTSCHE MONATSSCHRIFT FÜR ZAHNHEILKUNDE.

MEETING of Dentists in Rheinland and Westphalia, at Cöln, October, 1883.

At this meeting, Herr Herbst showed his gold nerve needle. He hoped it would supplant all those made of spurious metals. He uses wire from an old gold spiral pen, draws it out thinly, heats and cuts the needle lengths, which are then pointed. Every needle is laid on a Stents' plate, and heated in a soldering tube, through the heat the needle cleaves to the Stents, lies flat, and with a sharp graving tool a hook can be made. It is then taken out of the Stents, and with shellac a handle is cemented on. A gold needle outlasts a steel needle. If it breaks it will not, like the steel needle, discolour.

Herr Herbst explained his experiments with caoutchouc sets of teeth, covering the side of the palate with gold foil, and polishing the tongue side so that the set can be taken from the cuvette quite perfect. He showed a new tooth prepared for his own mouth; it was just as it came from the cuvette. On the palate side the plate was covered with gold foil, on the tongue side with tin foil. As to the preparation of whole blocks he brought two of glass and a ruby material to show how naturally the colour of the gums could be imitated with this mixture. A good receipt is one part of (ruby glass), two parts window glass, and one part *milk glass.* The chief advantage of this method is that every tooth can be made with the greatest ease to look as if it had a natural gum. If several teeth are required of the same colour the burning must take place in a Mupple stove or melting crucible. Blocks made with ruby material will look dark after vulcanising, to regain their right colour they should be touched with *aqua fortis.*

Herr Herbst showed how he prepared metal works without stamping, plate and wire. He uses platina foil, platina gauze and 14 carat gold He prepared a pivot tooth after his method, he made it by a gypsum model, but when at home he makes them without taking an impression. After the root is prepared, the tooth is ground on, then he takes a platina pivot and fits the tooth on to it, the end which projects over the root is bent towards the palate side. Then platina plate, which has been dipped in liquid wax, and platina gauze are taken, and from this gauze a little piece is taken off for covering the roots, bored through and placed on the pivot. In the same way a plate for the back teeth is made, then the root plate is fixed on the pivot, also the tooth, and the whole carefully taken out. The dampness of the mouth often prevents the wax from binding. Herr Herbst has often been helped by Stents mass. After this it is embedded in gypsum, the gauze is now with platina wire, placed at the back of the tooth and root plate, the whole painted over with borax, heated and soldered with gold; so that it looks as if it were covered with gold. Herr Herbst makes the pivot tooth in the first sitting of the patient, because if periostitis were to set in, he would have to wait a long time till the root was again healthy. The preparation takes about 30 minutes.

DENTAL COSMOS (*February*).

"EMBRYOLOGY, with Special Reference to the Development of the Teeth and Contiguous Parts," by J. L. Williams, Newhaven, Con. (Read before the New England Dental Society.)

The writer animadverts severely upon Prof. Garretson's address about "Dentition." which he characterises as a "presentation of misapprehensions and pseudo-philosophic vagaries." Attacking the subject in hand after some circumlocution, the author says: "The complete human organism is composed of a vast number of cells (corpuscles or plastids), all of which originate from a single cell or cytula. This parent cell is the result of union of the spermule and ovule—impregnation of the ovum. The avum is a mass of protoplasm surrounded by a thick membrane, the zona pellucida; in the ovum is the germ vesicle or nucleus, and in this the germ spot or nucleolus."

Fol's recent researches show that the spermatic cells of the male originate from primitive cells indistinguishable from the ova of the female. As development proceeds, the nuclei of the male and female cells unite and form a new nucleus, while their protoplasmic envelopes fuse and form the new cell-substance. The cell or ovum now divides in a binary fashion into 2, 4, 8, 16 segments, until a layer of cells lines the zona pellucida. The cells which finally range below the zona form two circles, the circle of larger cells being the epiblast or surface layer of the germinal membrane and the lower the layer of hypoblast. The spheres divide, the hypoblastic cells are arranged in the centre, the epiblastic cells forming themselves in a layer outside the epiblastic layer becomes the external epithelium, the hairs nails teeth and nerves of general and special sense; while from the hypoblastic cells the epithelium is formed, which lines the digestive tract. A cavity becomes formed, called the blastodermic between the hypoblastic and epiblastic layers, the hypoblastic cells then become spread out upon the lower surface of the epiblastic membrane, they increase in thickness especially at the point of attachment, and give the appearance of an opaque circular spot, this becomes the embryonic area; a little later a line is seen to cross this area, this is the primitive streak. The next change which appears is the formation of a third layer, the mesoblastic layer, this layer is derived by a species of fusion of the hypoblastic and epiblastic layers of cells. The author next proceeds to detail how two folds are formed by proliferation of corpuscles, which appear in front, and run parallel to the primitive streak; these are the medullary folds, and the depression left between them is the medullary groove. Next we are told a construction appears in the maternal mesoblastic plates, which marks the vertebral zone, in which appear indications of somites, the foremost of which marks the junction of the cephalic range and the trunk.

The increase in the length of the trunk is by the addition of fresh somites from behind. The entire portion of the medullary plate increases in size and forms a spatula-shaped cephalic enlargement. At the time when about eight somites appear, and the trunk considerably exceeds the head in length, there appears the first distinct traces of the folding, off of the head end of the embryo. The cranial flexure now presents the most marked and rapidly developing portion of the embryo.

Under the forebrain there appears epiblastic involutions, which develop into the so-called cervical fissures, several of which have only temporary existence, and disappear by the adhesion of their adjacent edges; between the fissures there are bands, ridges, or arches. The upper of these arches are intimately concerned in the formation of the mouth. The first visceral fold or arch divides on either side into two processes or buildings, which grow rapidly forward, the lower pair uniting at the median cone to form the inferior maxilla. This union occurs at the close of the first month of pregnancy. The two upper processes from which the superior maxilla is formed grow forward, but as they approach each other a third pair of processes is seen to grow downwards from the forehead or frontal apophysis. These processes develop into the so-called intermaxillary bones. That peculiar malformation known as "cleft palate" and "hare-lip" is caused by an arrest in the development of the intermaxillary bones. In the ordinary development of these parts the superior maxillary processes grow forward and unite with them on either side. The primary impulses which result in the development of these processes arise in the mesoblastic layer, while the epiblastic layer clothes them externally, and folds inwards to form the lining of the mouth cavity.

(*To be continued.*)

"ALVEOLAR ABSCESS opening into the Antrum and Nasal Cavity simulating Chronic Nasal Catarrh," by John S. Marshall, M.D.

Ozena is defined as being a chronic offensive discharge from the nose, the commonest causes of which are syphilis, struma, lupus, ulceration, caries or necrosis of the bones or cartilages, inflammation of the mucous membrane of the frontal or maxillary sinuses, or alveolar abscess, opening into the antrum of Highmore, or directly into the nasal cavity. The diagnosis is difficult, the means we have for arriving at such a diagnosis being imperfect. The superior incisors are in relation with the nasal fossa, the bicuspids and molars with the antrum of Highmore, and caries of these teeth is liable to cause a chronic inflammation of the mucous membrane of these cavities and so may arise ozena. The roots of the superior molars may penetrate the maxillary sinus and be separated from it by but a very thin lamina of bone, also the centering scisors may have a very thin lamina of bone over their apices, and destruction of this usually occurs. The common form of evacuation of an alveolar abscess is through the external plate of the alveolus, more rarely through the internal, and it may point upon the palate or tongue side of the ridge and it may discharge at the margin of the gum, less frequently in the nasal fossa or the maxillary sinus. Chronic inflammation causes it in another way; it may cause swelling up of the mucous membrane around the natural apertures of the antrum and frontal cavities, and by causing a retention of the normal secretions may give rise to ozena. In every case a very careful inspection of the teeth is advised to exclude this cause. Some stress is laid upon the fact that the alveolar abscesses are frequent causes of abscess of the antrum; authorities are quoted to enforce this. Dr. Marshall thus goes on to give his own experience, and says the importance of retaining this case in the mind whilst attempting a diagnosis of offensive discharge from the nasal passages cannot be over-estimated. Persistent, fetid, muco-purulent secretions, which have resisted medical and surgical treatment, having in many instances found to be completely cured by the evacuation of a chronic alveolar abscess which communicated with the maxillary sinus. Dr. Marshall believes the disease is more often found to be associated with the antrum than with the frontal sinus. This affection must be separated from abscess of the antrum; this latter condition being more severe, more acute, and being accompanied by fever and rigors due to the tension of the separated periosteum, it discharges sometimes into the meatus of the nose, the pus escaping by the nostril or posterior nares. Alveolar abscess discharging into the nasal cavity causes a less abundant and less offensive discharge. Since the discharge is less pent up when the ozena is due to dental abscess which is opening into the maxillary sinus, the pent up matter may cause septic poisoning; the secretion is often quite profuse and encrusts the nasal passages, and when the patient remains recumbent a considerable amount of discharge flows either from his mouth or down his fauces, causing suffocation, which awakens him. The discharges are said to be as offensive to the patient himself as to those about him, especially in the syphilitic and scrofulous varieties.

We are reminded that foreign bodies which have been pushed up the nose by causing ulceration may give rise to ozena. Further, neuralgic pains, especially unilateral, are stated to be characteristic. It usually follows the course of the dental nerves, and later it extends to the infra-orbital region and side of the nose. The superior teeth upon the same side of the mouth become sore and elongated, the discharge becoming more abundant at this stage, there is usually to be found a diseased tooth. Two typical cases are recounted. In one, a man aged twenty-two complained of discharge from the left side of the nose, together with occasional soreness of the left superior central incisor, and pain in the infra-orbital region. The central incisor was decayed upon the mesial surface and caused him a number of attacks of toothache, its pulp had been devitalized with arsenic paste and filled with gutta-percha. The tooth became elongated, and on examination of the nasal passage showed congestion of the left side. The filling was removed from the cavity of the tooth, and it was syringed with tepid water, the fluid passing through the apex of the root into the nasal cavity. This treatment was changed for carbolized water, two grains to the ounce, the tooth being packed with carbolized cotton. The patient got perfectly well. The second case was that of a gentleman, who said he had a discharge from the right nostril with neuralgic pain, he also suffered from nasal catarrh, the discharge varied in quantity and was offensive, the membranes of the nasal passage were inflamed, the teeth of the right superior maxilla were sore and elongated. When the discharge was abundant the first superior molar was devitalized and had a large crown filling of amalgam. This was removed and the pulp chamber was filled with highly offensive pus. The tooth was extracted much pus escaping, the ends of the buccal roots were rough. The same treatment as in the last case, and the similar happy result followed.

"Radical and Heroic Treatment of Alveolar Abscess by Amputation of Roots of Teeth," by J. N. Farrar, M.D., D.D.S., New York.

We are told that this paper is part of a series, the others having already been published in the "Dental Cosmos" and the "Dental Journal." The portion which advocated this mode of treatment has for its object the radical removal by amputation of any portion of roots of teeth that can be of any further use, if an entire tooth be extracted from a diseased socket. Such treatment might be termed highly radical, such a line of procedure taken in connection with the preservation and usefulness of a valuable tooth must be unwise and unscientific. If nature be able to effect a cure when the whole tooth be removed, much more ought she be able to do so when only a portion of the tooth be removed by amputation. Dr. Farrar has pursued this practice for nine years, and says it is highly profitable. The amputated portion may vary from a small extremity about the apex to the entire root, depending upon the extent of its degeneration. Roots that are slightly softened or decomposed about their apices, may be successfully treated by the old operation of scraping. When more extensive degeneration has occurred, more vigorous treatment is necessary, and in such cases amputation is advised.

DENTAL PRACTITIONER (*January*).

"The Approximal Shield for Bicuspids and Molars," by W. H. Gates, D.D.S., Philadelphia, Pa.

The operations for decay on approximal surfaces are not satisfactory. This is due to the loss of the natural safeguard, the natural contact of the teeth, "whereby a succession of strong natural arches is made to overhang and protect their cervical margins and the festoons of the gum, from the confined presence of particles of food." In the absence of this safeguard, the particles of food collect, and pressing directly upon the crown, causes a recession of the festoon of the gums. Its outline is reversed, and it is transformed into a receptacle for the very agent of destruction, the food debris. Decay hence attacks the neck of the teeth just below the line of the gum, with but little depth to reach the pulp, and little enamel for margins of the cavity, and exalted sensitiveness in the dentine. Approximal surfaces were held, but fallaciously, to be self-cleansing, when decayed. Permanent spacing for access to cavities, and countless fillings were adopted as routine practice, and gave bad results. The fillings became undermined. To remedy these evils contour restoration by building in gold was adopted. Contour-gold operations have disadvantages; if the gold shows it detracts from the beauty of the teeth, they require exceptional skill, they are costly and require physical endurance. Dr. Gates has supplemented the Arthur method by bevelling off the curved angles produced by the cut at the buccal aspect, the clinging of the food around which caused the trouble. The recession of the alveolar septum and festooning of the gum still continued, and was clearly due to the direct pressure caused by mastication. To remedy this, Dr. Gates employed gutta-percha. "I filled one cavity to the level of its margins, but from the other I allowed it (the gutta-percha) to project across, partly filling, but effectually bridging for the time the depression in the gum." The effect of this was satisfactory. This constituted the approximal shield.

The next step was to replace the gutta-percha by amalgam. This, after several years of trial, has proved satisfactory. The amalgam was carried more perfectly across the gum than was the gutta-percha, and the thickness of the shield was reduced, "leaving a close compact bulwark over the gum and rising so slightly as to be concealed from view." Rubber dam is unnecessary, occasional attention will maintain the the shield in good condition. "The shield ordinarily in making will partly cover the plain filling in the adjacent cavity, which, although made at a previous sitting, must at the last moment, when dry, be coated over with liquid gutta-percha, varnish, or oil, to prevent adhesion; and to be sure, as soon as set, a thin blade should test between them. Spunk is said to be useful, pressed up at the inner and outer ends of the cut. Food does not get under the shield." If incipient decay commences in the arch near the masticating surface it should be cut out and polished. The cutting should not extend deeper than is necessary to obtain a perfect shoulder.

The teeth are kept at the right distance apart, and so protected from pressure.

"CELLULOID," by Frank R. Faber, D.D.S.

If the case be favourable make an impression in plaster. Stain it with thin shellac varnish, when dry give it a coat of sandarac varnish (gum and alcohol). The model should be made with "casting plaster." A die and counter die are then gotten out and a block tin plate stuck up of about the thickness of base-plate wax. Great care to obtain a good fit is essential. Carve the wax for length and fulness, and let the patient mark it with the occluding teeth. If the case be an upper jaw, take a cast of the lower teeth and use the model. Place the two models upon the articulator, select the teeth carefully, fix them with strong wax. If upon trial in the mouth the teeth are found to be of the right length, &c., the case may be waxed. As much wax should be put on as celluloid is wanted. It should be carved and festooned to imitate nature, the rouge placed upon the palatine surface. Two pieces of tinfoil (No. 60 rolled) are then cut, one horseshoe shaped goes round the front; the other, shield-shaped, covers the palatine surface. These are placed in position, and burnished and carefully gone over with a pointed instrument. The edges of the foil are turned up one-sixth in. round the palatine piece and around the uppre edge of the front piece. Invest in the shallow side of the flask, with the heel of the model depressed, keeping the wax and foil about one-eighth or one-sixteenth of an inch above the investing plaster. Varnish the plaster only with sandarac and pour the top, care being taken to exclude all bubbles of air. The same kind of plaster is used for investing as for the model. When the plaster has set, separate the flask immediately, and remove the wax by pouring boiling water upon it. After the wax is all out, take a pledget of cotton between a pair of tweezers, and moisten it with alcohol or benzine, and wash off the surface of the foil. This will remove a black sediment which the water leaves, and which will stain the celluloid. Cut the waste gates large, with the inlets for the celluloid to get into them small, care being observed not to let the celluloid come into contact with the flask or it will take fire. Select the blank.

All the pressure that the plaster will stand is to be brought upon the case. The more the material is condensed the longer it will last when finished.

Dry heat machines are the best. The New Mode Heater is the best. Place the flask in the oven (320° F.), then let the steam which has arisen from the plaster, out; open the door; take out the flask—be careful for it will be hot; place the blank in position; put the flask together, and place it in the machine; put on the glass door; keep the heat at 320° to 330° for about twenty to thirty minutes, turning the screws gently at first, and increasing the pressure towards the finish; cool gradually. When cold, cut the case out of the investment. When the gates are cut off, a little chiselling done around the teeth, and the edges of the plate rounded and polished, the case is finished. The foil is very easily removed by raising the edge with a knife blade and stripping it off. For an attachment upon a metal plate, the upper edge of the plate around the front is turned to form a band, or one may be soldered on. The piece to form the cut or Cleveland chamber is allowed to extend up to the celluloid, and before soldering it fast, the edge, which will be in contact with the attachment, is bent up slightly. This will make a band inside and out, and will hold the celluloid firmly in place. After the attachment case is finished, the model and articulating teeth are placed in correct position, and a plaster articulator or spider made, which is to be preserved. With this guide the attachment can be replaced at short notice, should it become necessary. To replace a broken tooth, remove the porcelain and pins by heating them slightly and pulling out with pliers. Select the repair tooth, matching the shape as well as possible. Hold it between the fingers and heat the pins as warm as comfort will allow. Then press it quickly into position, or as nearly so as the heating will permit. Hold the labial or buccal surface of the tooth, "as the case may be," near the flame of a spirit lamp. When the tooth is heated sufficiently, press quickly and firmly into place, protecting the fingers with a napkin. Wax up any little crevices that may exist between the tooth and celluloid. Invest in the deep section of the flask, with the crowns of the teeth flush with the top of this part of the flask, leaving the plate in front of the teeth to be repaired bare, all other parts being covered. After the top is poured and hardened, separate, remove the wax, and put a thickness or two of heavy pattern foil in contact with the exposed portion of the plate. Bring the two sections of the flask together in the usual way, and the presence of the foil will cause the old material to be pressed up against the new tooth, securing it as firmly as before.

"Light: In Reference to the Needs of the Dentist," by Ashley Faught, D.D.S. (Read before the Odontographical Society of Pennsylvania).

The paper opens by insisting upon the prime importance of a good light in the Dentists' atelier. We are told, the operating room should have a single aperture, to avoid multiplying shadows. The aperture should be placed in the wall with its upper edge within an inch of the ceiling. By preference there should be one sheet of glass, not several panes, these have different powers of refraction, and the cross bars cast shadows. The quarter, north, east, south or west is immaterial—although the northern light is perhaps the steadiest. The main point is to obtain a steady and equable light—one which does not vary with the season. All ornaments, mirrors, &c., which cause irregularities, *e.g.*, flashes of light, are bad, and we are told the best hue for the atelier and its furniture is black. The direction from which light comes to the mouth is important. That which comes from the left is best, that which comes from in front is the worst—it strains the eye, fatigues the retina and is most baneful. The chair in which the patient is seated should be arranged so that the light comes from its left, while all other light is cut off, and further it is important that the reflected rays do not infringe directly upon the operator's retinœ. It is urged that to aid the Dentist's eye in its adjustment, he should wear a shade of black silk fastened by a wire, and attached to a spectacle frame.

Dental News.

THE AMALGAMATION OF THE MANCHESTER AND THE VICTORIA DENTAL HOSPITALS.

A meeting of subscribers to the Manchester Dental Hospital, Grosvenor Street, was held at that institution for the purpose of receiving a report as to the terms on which the proposed amalgamation of the Manchester and the Victoria Dental Hospitals is to be based.

The Rev. Dr. Burton presided, and, after referring to the meeting held in the Town Hall on the 22nd of January last, described the steps which had been taken since in order to bring about the amalgamation of the two hospitals. He stated that great credit was due to Mr. F. A. Huet for the important part which he had taken in the establishment of that institution. He had received a letter from Mr. Huet in which that gentleman said he approved of the arrangements that had been made by the two committees with one exception—namely, the alteration of the name of the Manchester Dental Hospital, which was already established, to that of an institution which was only in embryo. Mr. Huet also expressed the hope that "the dental profession of Manchester would unite in an effort to make the institution a blessing to the poor and an excellent clinical school for those who might wish to follow the dental profession.

Mr. THOMAS NORTH, the secretary, read a report, in which it was stated that since the 23rd of July last the number of patients treated in that institution had been 767, and the number of operations 1,001, of which 391 were on children under fourteen years of age; 114 cases had also been treated for irregularities in the teeth and gums. Mr. North also submitted the balance-sheet, from which it appeared that £171 9s. 8d. had been received in subscriptions, of which amount there was now remaining in the bank, after allowing for the expenditure, £6 11s. 3d. The liabilities of the institution amounted to about £19, while the assets were worth £100.

Mr. JAMES TAYLOR moved that the report and balance-sheet should be adopted, and that a copy of the latter should be sent to each subscriber.

Mr. JOSEPH KERSHAW seconded the resolution, which was carried.

The CHAIRMAN stated that the terms on which the proposed amalgamation was to take place constituted the next matter for consideration. Although the promoters of the Victoria Dental Hospital had not even a building of their own, he had been induced to agree to the terms which would be submitted to that meeting, because he clearly saw that they had superior professional strength at their back.

Mr. NORTH then read the agreement entered into by the committees appointed to act on behalf of the two hospitals. It provided that the Victoria Dental Hospital shall take over the tenancy of the premises in Grosvenor Street now known as the Manchester Dental Hospital, and that the building is to be henceforth known as the Victoria Dental Hospital. Subscribers of five guineas to the existing institution are to be life governors of the Victoria Dental Hospital, and the present annual subscribers are to have all the rights and privileges in the new institution to which their subscriptions entitle them in the Manchester Dental Hospital.

Mr. REUBEN SPENCER said that although he considered the conduct of the gentlemen who attended the meeting in the Town Hall was somewhat uncourteous to those who had established that hospital, yet he was pleased with the result which had been arrived at. The new hospital appeared likely to be a very strong institution, and would in all probability, therefore, prove more widely useful than the Manchester Dental Hospital was at the present time. He therefore moved that the provisional agreement should be approved by that meeting, and that the committee of management should be authorised to take the steps necessary to carry it into effect.

Mr. JAMES TAYLOR said that although he did not consider some of the terms advantageous to the Manchester Dental Hospital, still for the sake of harmony and peace he would second the resolution.

The Rev. J. B. M'GOVERN stated that he approved of amalgamation, but he considered that the Manchester Dental Hospital was practically being swamped and not amalgamated.

After a few observations from the CHAIRMAN, who admitted the truth of Mr. M'Govern's remarks, the resolution was carried.

Mr. ALFRED CREWDSON said that as it was mainly due to Mr. Huet that there was a dental hospital in Manchester at the present time, he would move that the Chairman be asked to convey the thanks of the meeting to that gentleman for the exertions he had made in the establishment of that institution.

This was seconded by Mr. M'GOVERN, and adopted.

On the motion of Mr. F. W. TRAVERS, seconded by Mr. THOMAS BUCKLEY, a vote of thanks was accorded to the Chairman and to the Secretary for their services.

THE GLASGOW DENTAL HOSPITAL AND SCHOOL OF DENTISTRY.

THE Annual Meeting of the dental staff connected with the Glasgow Dental Hospital (Anderson's College) was held at the latter end of last month in Anderson's College Buildings, Mr. W. S. Woodburn being in the chair.

The SECRETARY (Dr. Taylor) read the Annual Report, from which it appeared that nearly 3,000 operations had been performed during the past year, of which 2,000 were extractions, the rest being fillings, irregularities, and operations for cleft palate. The Secretary also intimated that during the past year six assistant dental surgeons, each of whom is a licentiate in dental surgery, had been added to the staff, thus making the number of dental surgeons twelve on active duty.

The TREASURER (Mr. J. R. Brownlie) read the financial statement, which showed a balance of nearly £14 in favour of the hospital after meeting all claims.

These reports being considered highly satisfactory, the Secretary and Treasurer were awarded a cordial vote of thanks.

The Glasgow Dental Hospital, it was explained, being ituated in Anderson's College Buildings, and connected with ts medical school, is, through the kindness of the managers nd trustees, relieved from the necessity of paying rent and axes, and has hitherto depended for support entirely on the ees of the students attending the hospital, no appeal having een made to the public for support.

Taking these facts into consideration, along with the fact hat the hospital has only been in existence for four years, he condition of the hospital, both as regards quantity and uality of work done, is considered all the more gratifying, nd augurs well for the future.

The usual vote of thanks to the Chairman terminated the proceedings.

MIDLAND ODONTOLOGICAL SOCIETY.

The first ordinary meeting of this new society will be held t the Medical Institute, Edmund Street, Birmingham, on April 3rd, at 7 p.m.

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

The annual meeting of the above society will be held on March 13th, at 2.30 p.m., the annual dinner of the members and the L.D.S. taking place the same day at 6.30 p.m.

VACANCY.

National Dental Hospital, 149, Great Portland Street, W.—Applications are negotiated, on or before March 28th, from gentlemen holding the degree of Licentiate of Dental Surgery, for the post of House Surgeon to this hospital. The hours of attendance are from nine to two daily, and the salary £50 per annum.

Notices of Societies.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

Ordinary General Meeting, held Feb. 11th, 1884,

C. Truman, Esq., M.A., M.R.C.S., &c., President, in the Chair.

The minutes of previous meeting were read and confirmed.

The President then read his Inaugural Address, which was much appreciated by all present. (See p. 200.)

A letter was read from S. J. Hutchinson, Esq., M.R.C.S., &c., on behalf of the Odontological Society, kindly granting to the Students' Society the use of a large glass case for the museum. A vote of thanks was proposed by the President and carried unanimously.

Casual communications were received from Messrs. Skipp and Campion; the former gentleman showing a plaster model containing a supernumerary tooth, the latter a specimen of complete ossification of the pulp.

The PRESIDENT next related a case of profuse hæmorrhage from the pulp which came under the treatment of F. Canton, Esq.

The new laws of the society were then discussed down to the 12th clause; time not permitting the discussion to continue longer, when it was agreed to re-open it at the next meeting.

The PRESIDENT then called on Mr. Pedley for his paper, entitled "Diseases of the Pulp." (See p. 208.)

A very lively discussion immediately followed, in which the President, Messrs. Turner, Davis, Baldwin, Campion, Mundell, and Woodhouse took part, the subject proving such a highly interesting one. It was eventually proposed by Mr. Paterson, and seconded by Mr. Levason, that the present meeting be adjourned, and that the discussion be continued at the next meeting to be held on March 10th, which was unanimously agreed to.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MONTHLY MEETING, HELD FEB. 4TH, 1884.

J. SMITH TURNER, M.R.C.S. and L.D.S.Eng., President, in the Chair.

THE Minutes of the previous meeting having been read and confirmed,

Mr. H. C. Quinby signed the Obligation Book, and was formally admitted to membership by the President.

Mr. John McKno Ackland, L.D.S.Eng., of Exeter, was balloted for and unanimously elected a member of the society.

Mr. WEISS announced that the recently published volumes of "Transactions of the Royal Institution of Great Britain" and of the "Quarterly Journal of the Microscopical Society" had been presented to the library.

Mr. S. J. HUTCHINSON said he had received from Mr. Fenn Cole, of Ipswich, a model of a case of cleft palate. He was sorry he had not thought of suggesting at the last meeting that any models of cleft palate cases which might be sent to him would be greatly increased in value if accompanied by a reproduction of the plate which had been fitted for the relief of the deformity.

He also exhibited for Mr. Fenn Cole a model of the upper jaw of a lady, aged sixty, showing the right upper canine just erupted. The place of the missing canine had for many years been filled by an artificial one attached to a plate, and he (Mr. Hutchinson) thought he had noticed in younger people that when the appearance of any of the permanent teeth was delayed, wearing a plate seemed to facilitate their eruption.

Mr. F. **Canton** related the following remarkable case of hæmorrhage after attempted extraction of a tooth:—"A police constable was sent to him by a divisional surgeon with a request that he would advise as to the best means of arresting the very free hæmorrhage from a tooth from which the man had been suffering for twenty-four hours. The patient's mouth was full of blood cot, on the removal of which Mr. Canton found that the bleeding came from a lower molar. The crown of the tooth had been broken off in an attempt at extraction, leaving the pulp exposed, and the hæmorrhage came from the pulp, which was exceedingly sensitive. Pressure being impossible, Mr. Canton recommended immediate extraction of the tooth, but the patient was unwilling to submit to this, and was besides very faint from pain and loss of blood. He was therefore given some ice to suck, and this after a short time arrested the bleeding. The tooth was extracted next day under gas at the Dental Hospital, and no unusual amount of hæmorrhage followed the operation." Mr. Canton added that he had never before met with a similar case, and would scarcely have thought it possible that such profuse and long-continued hæmorrhage could have arisen from such a source.

(*To be continued.*)

The next meeting of the society will be held at the rooms, 40, Leicester Square, on Monday, March 3rd, at 8 p.m.

Casual communications by Messrs. E. Lloyd Williams, W. Hern, F. N. Pedley, G. W. Field, A. S. Underwood.

Communications will be read from Messrs. Dunn, of Florence; and F. R. Lloyd, of Agra, India.

I. H. Mummery } *Hon Secs.*
D. Hepburn }

To Correspondents.

BOOKS AND PAPERS RECEIVED.

"Dental Cosmos," "Dental Practitioner," "Lancet," "British Medical Journal," "Glasgow Medical Journal," "Transactions of Dental Society of New York," Pharmaceutical Journal and Transactions," "Etudes d'Anatomie Topographique et Chirurgicale sur la Bouche" (Dr. Magitot), "Repertorio Dental," "Etudes cliniques sur les accidents de l'éruption des dents" (Dr. Magitot), "Recherches sur les Gencives et leurs Maladies" (Dr. Magitot), "American Journal of Medical Sciences," "Dental Luminary," "Deut. Monatsschrift f. Zahnheilkunde."

Correspondence.

To the Editor of the "British Journal of Dental Science."

Sir,—I have to thank you for so kindly inserting Mr. Lynne's case in your journal. In addition to the three guineas already acknowledged, I have received the enclosed list of subscriptions, which, perhaps, you will kindly publish in your next issue. I am, yours truly, E. Wilmot.

Victoria Park Road, South Hackney, Feb. 18th, 1884.

THE LYNNE RELIEF FUND.

Amount already acknowledged	£3	3	0
Mr. G. Torpey, 220, Gower Street	1	0	0
E. Pretty, Great Marlborough Street	0	10	6
W. W.	0	7	0
T. W. Moynes	0	5	0
J. W. P., Leeds	0	5	0
J. H. Bottomley, Carlisle	0	5	0
J. H. Thomas, Landore	0	5	0
F. Small	0	6	0
W. Wadall	0	2	6
C. W. Smith	0	2	6
J. H. Rugg	0	2	6
W. C.	0	2	6
A. McF.	0	2	6
E. J. O. F.	0	2	6
James Edge	0	2	6
W. W. (stamps)	0	4	0
A. Rogers, 72, Kensington High St.	0	2	6
S. Thomas	0	2	6
J. S., Greenwich	0	2	0
J. B.	0	1	0
G. W. Hill	0	1	0
T. N.	0	1	0
W. McD.	0	1	0
E. Farnell	0	1	0
C. King	0	1	0

To the Editor of the "British Journal of Dental Science."

Sir,—Can any of your readers tell me of a cure for, or rather a preventive of nausea when taking impressions? A gentleman patient of mine has such an extremely sensitive palate that he commences retching the instant I insert the impression-spoon. As he requires an entire set of artificial teeth, it is very necessary that impressions should be obtained. Apologizing for troubling you. Yours, &c., L.D.S.Eng.

Newcastle-on-Tyne, Feb. 18th, 1884.

British Journal of Dental Science.

No. 388. LONDON, MARCH 15, 1884. Vol. XXVII.

ALVEOLAR ABSCESS TREATED BY AMPUTATION OF THE FANGS.

By C. W. Dunn, L.D.S.Eng., Florence.

I see by the last number of the "Cosmos," which has just come to hand, that Dr. Farrar speaks of the amputation of the fangs of a tooth affected by abscess.

Dr. Farrar, although he occupies two pages of the "Cosmos," has got only so far, in his explanation, as to promise to tell how to do it, at a future time. Will you allow me, in a few lines, to say how I have practised the amputation of fangs in similar diseases.

I take a tube about two or three lines in diameter, the extremity of which is a saw, and, applying it to the engine, I cut through gum, alveolar process, and apex of the root, and generally am successful in bringing it away with its sac inside the tubular saw. If it does not come out in this way, it will, after a few days, show itself at the surface of the wound, and can then be readily removed and without pain.

I have at the present moment a case where there had been a fistulous discharge under the chin for some years. I amputated the apex of the root of the right central inferior incisor about a month ago. I see the patient occasionally, and the discharge at the chin has completely ceased, and every symptom seems to promise a favourable and permanent result. The tooth also is quite firm and the gum seems well healed. I shall, however, wait another month before I fill the nerve canal so that all parts may be in as favourable a condition as possible.

I do not wish, by these remarks, to claim any priority, but I think that it is a very old and well known operation. It seemed to me unnecessary to take so much time and so much space to describe what is a very simple and easy operation. But perhaps we shall learn, when the next number arrives, that Dr. Farrar's manner is simpler still, and therefore better.

NEW MODE OF TREATING DEAD TEETH AND ALVEOLAR ABSCESS.*

By Mr. Walter Whitehouse, L.D.S.

Gentlemen,—I believe the mode of treatment I have the pleasure to bring before you this evening is less intricate than many suggested from time to time. But, I take it, no apology would be required were it otherwise, for it is the good fortune of many to practice amongst a class of patients who attach a high value to the preservation of their teeth; and it must occur in the practice of all who are interested in our work to come across cases where the desire of saving a tooth is entirely independent of the remuneration, except as to one's professional reputation, and the satisfaction of success.

A few moments' consideration of the original cause of trouble at the apex of roots will enable us to realize what is required to be accomplished in the way of successful treatment. If the original cause is admitted to be irritation from decomposing pulp, its removal will in most cases effect a cure. Should the fibrous nature of the pulp be not quite destroyed, its removal by a Donaldson bristle can often be satisfactorily accomplished, especially when the offending tooth is either an incisor or second upper bicuspid—the canals in these being single, and much larger than in the other teeth, and easier of access. But in the treatment of the remaining teeth there is a large percentage where it is impossible to remove the whole of the debris from the roots, either from extreme smallness, partial obliteration by the formation of secondary tissue, granular matter or curvature. And it is surprising to me this has never been admitted, for the literature of the subject (especially American) possesses many communications on fang filling, &c., descriptive of *modus operandi*, without the slightest reference to inapplicability to many cases from causes I have just named.

Of course there are many cases where more or less debris is left without harm; there are many where the smallest quantity is not; and it is to inject and thoroughly saturate this remaining debris with a disinfectant, and render it inert, without setting up irritation, that I hope the use of this flexible nozzle syringe will prove useful.

In the treatment of an upper molar, the cavity is roughly prepared and the pulp chamber cleared; the palatine canal is now fully exposed to view (trouble in upper molar arises three times in four, in connection with the palatine fang, which fortunately is comparatively easy to clear), a piece of very small platina tube is taken, long enough to reach the masticating surface, with a small square of thin (No. 1) plate, soldered at one end, which re-forms, so to speak, the pulp chamber and commands the three fangs. The tube is of the exact size to admit the nozzle of the syringe, and if the nozzle is made hot and touched with the smallest particle of wax, it makes an air-tight joint.

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* Read before the Odonto-Chirurgical Society of Scotland on Feb. 14th, 1884.

The tube is placed into position and the tooth filled with a white filling. When the filling is sufficiently hard, after the lapse of ten minutes, the syringe is *half* filled with whatever medicinal agent it is thought proper to use, the nozzle is inserted into the tube. Now before any attempt is made to force its contents into the tooth, a slight attempt must be made to exhaust, and it is by the interchange of a portion of the contents of the tooth, whether air or saliva, with the contents of the syringe, that the remedial agent can be carried to the apex of the tooth. If this is not roughly or overdone, setting up irritation, the pulp debris is thoroughly permeated, avoiding condensing the debris at the apex of the root in attempt to disinfect by applying the remedial agent on cotton wool and bristle. The application of the dressing will usually not be required after the first two days, more often than once in two or three, there being always a free vent for gases and absence of offensiveness arising from wool dressings. It should be borne in mind that whilst progress to recovery is being made, nature should be interfered with as little as possible. The tooth having arrived at a comfortable condition, the tube may be sealed, and the whole allowed to act as a temporary filling for a few months. I would remark the increased comfort to the patient of a white filling instead of a mastic, and the saving of time in subsequent dressing, from not having to remove and re-insert the temporary filling.

I attach much importance to the suggestion of my friend Mr. W. A. Turner, that carbolic acid is generally used far too strong, the result of its action as an irritant and escharotic often destroying its value as a disinfectant. Carbolic acid, if used in greater strength than half a drachm to two ounces of water, is irritant and escharotic, rendering callous the tissue it comes in contact with, the slough of which tissue acts as a foreign body, setting up irritation from its inability to be cast off.

For the treatment of the class of cases we have under consideration, there is wanted a remedial agent that is disinfectant and non-irritant.

Considering its power, carbolic is perhaps still the best, diluted to the above proportions with equal parts of glycerine and water—glycerine being soothing and readily absorbed. The objection to iodoform is its pungent odour, which lasts for an indefinite time, thereby excluding the possibility of ascertaining if decomposition is still going on by the delicate test of the odour on re-dressing. It is thought it deoderizes, but does not disinfect. Sanitas is practically odourless, but I have acquired the distinct opinion it is more irritant than carbolic. An extended trial would, I think, prove glycerine and iodine to be most useful.

In conclusion, gentlemen, I have pleasure in thinking that by bringing this subject before you the problem may receive further elucidation by your attention being once more directed to it, and by a free discussion, which, I hope, will ensue.

UPON REFLEX ACTION BETWEEN THE UTERUS AND THE TEETH.

By Cavalier Dr. Cacciaguerra, M.D., of Catania.

The influence of the uterus on woman often causes her to undergo a temporary physical, and sometimes even a moral change, depending on the degree of irritability or conductibility of the action reflected in near or distant organs, and in proportion to the importance of the physiological function it has to do with. Here we treat only of a reflex symptom of menstruation.

The base of reflex movement physiologically is concentrated in the spinal marrow. This again influences the great sympathetic nerve and its dependents, which have great influence on its regular and temporary functions.

Modern physiology, however advanced, has not interested itself on the reflex action which certain organs produce upon the teeth. The following case of physical pathological facts is interesting in the connection between the uterus and the suffering accompanying the cutting of a wisdom-tooth.

Miss A. G., twenty-four years of age, of a weak and nervous temperament, begged me to treat her for pain in a wisdom-tooth of the right lower jaw. On examining the tooth I could find no pathological fact which could account for the pain, nor did any of the other teeth show any lesion. The first small left molar of the upper jaw, which two months before had been the cause of a fistula from caries produced by an inflammatory suppuration, had been treated and cured by me. I afterwards filled it, and it was intact. I then turned my attention to other organs in order to seek the cause. The patient had nothing to complain of except the pain, only it was within two days of the time of menstruation. Knowing well how much this physiological function influences woman, and that the simple predisposition to such a period would be sufficient to reflect itself to far off organs and cause different kinds of phenomena, I began to believe that the neuralgia might be caused; first, by the state of the tooth, remembering how in these cases severe congestion may be produced by the well-known phenomena of the eruption of the wisdom-tooth;* secondly, that the pain might be caused by the excited state of the young lady's health; in fact, I observed that the neuralgia was rebellious to all local or general sedatives, thus strongly indicating the disturbance in the state of the patient, which increased in intensity, and was accompanied by nervous hysterical paroxysms, to which a continual restlessness of the lower extremities was added. This very marked phase coincided with the menstrual discharge, which ceased in three days; terminating in a complete calm lasting for the subsequent fifteen days.

In the beginning of the second fortnight the young lady began to be aware of a weight at the angle of the jaw around the wisdom-tooth already mentioned, and recalled to her mind the beginning of the first attack. This feeling of weight increased gradually until, with the menstrual discharge, the paroxysm gained its height; then followed the same phase, the same symptoms as before up to the end.

The symptoms of the first and second attacks, followed as they were by an accurate examination, established the diagnosis that the disease was a physiological reflex symptom produced by the menstruation, which, by the coincidence of the development of the wisdom-tooth, showed itself by an acute and periodical neuralgia.

The therapeutic indications were divided into three periods. In the quiet phase, which was that of the first fifteen days, taking into consideration the weak constitution of the patient and the hysteria which accompanied the attack, a nourishing diet was desirable. In the second, at the first feeling of weight, I prescribed a local and antiphlogistic treatment until the pain began, which coincided with the menstruation. In the third, the period of the menstrual discharge, I prescribed sedatives. By following this treatment a sensible improvement of the hysteric symptom was gained.

Towards the eighteenth day, when near the third time of menstruation, the patient again became aware of the weight in the same manner as in the preceding attacks. Then, added to the other prescribed treatment, I wished to try the scarification of the alveolar edges of the wisdom-tooth, considering that the circulation in the alveolar periosteum was impeded; in fact, the flow of blood diminished, in a certain degree, the sense of local weight until the twenty-third day, but it showed itself during the period of menstruation which was near. I then proceeded to a second scarification, which relieved the patient for twenty-four hours, after which it returned and increased with the pain until the twenty-eighth day, when with the menstrual discharge the paroxysm which passed through the same phases was altogether less severe, and the hysteric symptom hardly showed itself.

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* See cure of external fistula produced spontaneously by the eruption of the wisdom-tooth.—*Giornale di Corrispondenza pei Dentisti.* Germany, 1878. By same author.

From the fourth to the eighth month, the patient followed the same curative treatment which from month to month subdued the disease, until it was completely cured; when the eighth menstruation, and the following ones were without any reflex consequences. From that time the menstruation has shewn itself in its normal state.

I observe in this fact, that the reflex coincidence between the tardy cutting of the wisdom tooth, and the menstruation is most striking. But what connection can exist? It is unknown and indefinable with my actual knowledge, but the connection between one organ and another which is based on the continual irritation of the vaso-motor and regulatory nerves, the centre of which is the spinal marrow where all actions are reflected. In this manner we perceive that the nerves of the utero-vaginal system, and its appendages supplied by the pelvic-plesso sympathetic basin, are in relation with the spinal sympathetic nerve, therefore every or any original impression in the uterine system would be transmitted to the spinal marrow; on the other hand, the vaso-motor nerves of the dental system depending on the plesso-sympathetic nerve of the external carotid, derived from the ganglion of the upper cervical in connection with the spinal sympathetic nerve, would form the reunion of the uterus and the teeth by means of the spinal marrow, and in this way we may explain the reflex action in these cases physiologically received and transmitted by the great sympathetic nerve.

FOOD OF THE INDIAN TRIBES OF THE INTERIOR OF OREGON.—They all prefer their meat putrid, and frequently keep it until it smells so strong as to be disgusting. Parts of the salmon they bury underground for two or three months to putrefy, and the more it is decayed the greater delicacy they consider it.—*Wilke's U.S. Exploring Expedition.*

REPLANTING TEETH.

Cases of Dr. Anton Bleichsteiner.

This highly important subject has received perhaps more attention in Germany than in this country. While novelty can not be claimed in its favour, the methods now in vogue are so unlike what our forefathers practiced that replanting teeth has come to be looked upon as practically a new operation.

Dr. Bleichsteiner has been collecting cases, and in a recent issue of a German contemporary he publishes the following cases.

From a careful study of his facts it will be seen that it is necessary to discriminate the cases, and not to expect to obtain equally satisfactory results in all instances.

Case I.—Caroline M., of small and weak build, had the second lower molar on the left side very decayed. Only the outside wall in the upper half was left; the tooth was very painful. The molar was extracted, and the cavity was excavated and filled with amalgam, and the roots were rounded so that there seemed only to be one. The alveolar cavity was well washed out with water and mouth tincture, and the tooth was put tightly back into the lower jaw, and left without any other fixing, it was then committed exactly as it was to its fate. The patient was told to apply ice and to use the mouth tincture and water as a gargle.

2nd day. Next day the patient said the tooth had been very painful, keeping her awake half the night. An examination showed that the gum round the replanted tooth was very red, very swollen and painful to the touch. The tooth was loose and matter oozed out.

3rd day. The edge of the alveolus was red. The peripheral redness and swelling had gone down. No pain when touched, more mattery discharge, tooth loose and painful.

4th day. On being pressed matter oozed out of the alveolus. The sloughy part of the inner side of the gum had gone.

5th day. More pus comes out when pressed, less pain than before, mouth to be often rinsed with cold water.

On the 9th day there was very little pain. Patient does not bite hard, otherwise no pain day or night. Tooth still loose.

10th day. Gum normal colour; very little swollen; tooth a little loose.

12th day. A little pus squeezed out, but there is less pain. The gum is of normal colour, very little mattery secretion. No swelling, no pain, but patient can only chew soft meat. Very little pus comes out now; tooth a little loose.

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On the 73rd day, pain at first comes on now and then; no pain on pressure. On the next day patient makes no further complaint; tooth quite firm, gum has closed round the tooth, patient can eat anything.

Case II.—*Case in which Replanting failed.*—This was a case of a young man, aged eighteen years. Upper molar very decayed, and very painful. The tooth was taken out, and was filled with amalgam, and the roots were rounded. The gums were washed well with mouth tincture and water, and the tooth was replanted. Ordered ice and tincture. Same day patient came back and said he had bitten with it, and it was very painful. Asked me to take it out; I did so.

Case III.—*A case in which Replantation was successful.*—An upper molar, very decayed, the tooth was taken out and filled with gold, the roots uninjured, the roots were rounded. The mouth well washed out with the tincture, the tooth was replanted without pain in any way. Ice and tincture to gargle well ordered. No pain ensued next day except when he ate with it. There was a hardly noticeable swelling and no redness. No pus came out by the tooth on pressure, but pain was felt. On the fourth day there was no swelling, no redness It still gave him pain if he ate with it, tooth itself looser than the others. On the seventh day it hurt him very little, the tooth was still loose, but it was not till thirty-one days after replantation that the tooth was perfectly tight, and like the others.

Case IV.—*Case in which Replantation was unsuccessful.*—This was a case of a girl fifteen years old, who applied for relief on account of pain in her first upper molar. Periostitis alveolaris was the cause of the pain. The tooth was removed. Its root was healthy, and having rounded the root, the jaw was well cleaned out, and the tooth replanted. There was a great deal of pain, which continued in spite of ice. On the second day there was less pain, but still it was very painful to the least touch. On the third day the pain was very bad, evening and night. So the tooth had to be removed.

Cases V. *and* VI.—*Case of K. and M., both girls. K., fifteen years old; M., twenty-one years old.*—It was necessary to remove two molars. M. had to have one molar out, this last one had only the root left, so I obtained permission to transplant one of K.'s molars into M.'s mouth. I had great trouble in taking out M.'s tooth, and left part of it in the gum. Then K.'s was removed and the root was rounded, and the tooth was transplanted into M.'s jaw. The tooth was smaller than the one that had come out, and gave little pain

On the third, fourth and fifth days, there was not much pain except when pressed. The tooth was loose, and there was a slight swelling and redness of the gum, a little matter could be pressed out, the teeth were well rinsed daily with mouth tincture. On the nineteenth day all swelling and redness had disappeared, no pain felt on the gum being pressed, tooth still loose. On the twenty-sixth day the tooth was loose, no pain felt in eating or by pressure, natural colour, no swelling. M. then had another tooth (root) pulled out and one from K. transplanted. They were very much the same shape and gave little pain on being transplanted. She said that the same evening and the next day and evening there was great pain, the swelling was very noticeable, the gum was red and the tooth loose. On pressure downwards on the top of the tooth, there was not much pain and no secretion came out. On the twelfth day the swelling and pain had gone down, she could eat with it without pain; and on the thirty-third day it was perfectly well, no pain, could eat with it, and the tooth was firm.

INAUGURAL ADDRESS.

By J. Smith Turner, M.R.C.S. and L.D.S.Eng.

(*Continued from p.* 212.)

In its social aspect our society is equally valuable, and I think even more necessary to the well-being of our profession. Gentlemen, it is a hard matter for many of us to live a professional life. It is hard to walk along the footpath of professional integrity, with the faint shadow of poverty clouding our progress, while the chariot of the charlatan bears him along in ostentatious wealth. But there is this difference between the two conditions: the modest pedestrian passes along quietly in the path of duty, and respecting the unwritten laws of propriety, while the high-stepping horse and big carriage-wheels of the humbug throw up any amount of mud and filth. This is consolation of a kind; but the standard upheld by this society shuts out the one and admits the other, and the strength imparted by this recognition of integrity, and by periodical contact with his brethren, does more to support the honest, clean practitioner, however poor he may be, than any amount of philosophy.

I have said that it is sometimes hard to lead a professional life. There are many things to discourage us beside the success of the quack. The general public is wonderfully credulous, and exhibits a capacity for being gulled which seems ineradicable. "Only blow a bubble and you will get plenty to subscribe for soap," said a keen observer of men, and this seems to hold good to any extent with the public in regard to our profession. No promise seems too absurd for even a large number of educated people to believe. Impatience of pain and inconvenience have a good deal to do with this credulity. The promise of freedom from pain hits a great public want, and the promise of such results in a few days, as the honest practitioner knows cannot be accomplished in as many months, is another bait which exactly suits the gullibility of the public; and when all this is capped by a list of fees running far below the possibility of the narrowest margin of profit, the whole allurement is complete. Then, again, there is the commercial character of the age. But few of even the educated classes see the unprofessional nature of advertising. The newspaper press and periodicals of various kinds encourage it to the utmost, and publish matter in the form of advertisements which they would reject at once if tendered to them in the form of news. The proprietors of any advertising medium never stop to inquire as to the probability or possibility of the statements made in advertisements being true. Probably, in a strict business sense, they are correct, and if the managers of papers tried to do such a thing they would find before them a hopeless task; but I cannot think that the whole moral turpitude lies with the author, when the proprietors of papers preaching morality, and even religion, insert paragraphs into leading positions in their periodicals, puffing some quack medicine, in a form only to be distinguished from general news by the addition of "Advt." in small type at the end, a term which is not likely to be plain to many readers, seeing that extracts from other periodicals are acknowledged in a somewhat similar manner. All this is considered legitimate as a means of making money. Truly the worship of the Golden Calf is not yet extinct, and many are the shrines raised to its honour in this wilderness of London. It is only a week or two ago since the leading journal published a highly laudatory article on the maker and vendor of a celebrated quack medicine, who had spent a large fortune yearly in advertising. The writer was candid enough to say that he did not stop to inquire how far the nostrum possessed all the qualities claimed for it. To an ordinary unbiased mind the marvellous qualities claimed for Holloway's ointment and pills would preclude the necessity of stopping to make any such inquiry, but £45,000 per annum spent in advertisements cast a glamour over the mental vision of the writer in the "Times;" and the persistent repeater of millions of misrepresentations, and the persistent trader on the credulity of the public. and on the sufferings of humanity, especially in its most painful and hopeless forms, went down to the grave in a halo of glory, because he had endowed two charitable institutions and been indomitable and unscrupulous in his efforts to make money. I say, Gentlemen, that, in the face of this great public disregard for even what may be called commercial morality, it requires a great effort for any but the most determined or the most prosperous to abide closely within the confines of professional restraints. In this light we can hardly be surprised that a profession such as ours, whose education has been so infamously neglected, and whose ranks could until lately be recruited from the failures in all sorts of trades and professions, should exhibit this vice of advertising and, to put it mildly, reiterating misleading statements, to an extent which makes us feel ashamed to be called by the name of Dentist. Perhaps this is a false shame ; at all events I think that it is a wrong one, for rather we ought to be ashamed of ourselves for having allowed our profession to sink so low without long ago having made a determined effort to raise it at any cost.

Another influence against which we have to contend is the action of, happily, a limited number of members of the medical profession. They seem to think that anything is good enough or that nothing is bad enough for Dentistry, and although they would shrink with horror from one of their own branch of the healing art adopting certain methods of obtaining notoriety, they see nothing wrong in a Dentist doing so. They thus, by their countenance and support, do their best to encourage the advertising dentist.

Gentlemen, these are a few of the influences which tend to make it hard for many of us to lead a professional life, and I think that the social influence of our society is as a tower of strength amongst us. We keep each other in countenance, we support each other in the midst of much discouragement; we know that if patients be going to a strange place, we shall not disgrace ourselves, nor lay them open to unprofessional treatment, if we can send them to a member of this society ; and I think we may feel satisfied in saying that year by year our difficulties will grow less, and that as our ranks are gradually filled up by educated men, and the dental diploma becomes more and more appreciated, the professional spirit will be more and more diffused and become permanently established among the professions at large.

Gentlemen, I have tried to show that our society has certain well-defined functions. I need not detain you to point out to you how well it has discharged them from the time of its formation until now. If I can hand to my successors those valuable traditions unimpaired in their integrity, I shall consider that I shall be making you the very best return which my gratitude can devise for the honour you have done me in making me your President.

There are one or two additional matters to which I should like to draw your attention, if you be not already tired of listening. This society is, I believe, firmly established, and although our late energetic President seemed to be in rather a desponding mood, owing to the few additional members we had last year, I am convinced that the more the advantages offered by this society are known, and the more its influences become appreciated, the better will it be supported. I am also convinced that the wider the diffusion of education amongst us, the more will Dentists appreciate the necessity for such a centre as this society provides, so that the dental profession may be kept before the professional public in its proper aspect.

There is another point to consider in estimating the number of last year's recruits. The resolution of the council, endorsed by the society, excluding all from membership who do not hold a recognised diploma, is now in full force, and its operation has necessarily reduced materially the number of those who might have become our supporters, and thus may have had some influence on the number of new members who have joined the society. Seeing that this resolution was passed with the view to support and raise the value of a legal qualification amongst us, we may anticipate that those who become possessed of a diploma will not be slow in taking advantage of this exclusive privilege presented to them.

(*To be continued.*)

Delayed Dentition.—A writer in "Dental Luminary" says: "About twelve months since we extracted for a young lady, about twenty-four years of age, all of the upper teeth, on account of having been sadly neglected, and being too far gone to attempt to make them any longer useful. At the time we noticed that the right cuspid, or eye tooth, was missing; we asked when it had been extracted. She did not remember. We made her a temporary set of artificial teeth and thought no more of the missing tooth. In this month, January, she came in with a sister who was having some filling done, and while here called our attention to a new tooth she was 'cutting.' We examined, and found the missing eye tooth now putting in an appearance, having been due fifteen or sixteen years ago."

DISEASES OF PULP.

By Mr. Newland Pedley, M.R.C.S. and L.D.S.Eng., &c.

(*Concluded from p.* 209.)

I remember reading an article in which we were told that the treatment of ulceration of pulp was to remove the affected surface with fine sharp instruments, and then to bring the margins of an incision together that a cicatrix might form rapidly. Scarcely less comical is the confiding manner in which fresh nostrums are daily being used, in total disregard of the fact that the position of the tooth subjects it to a set of conditions totally dissimilar to those of any other organ in the body. Powerful caustics, sedatives, astringents, disinfectants, are all heaped in at hazard, and are often applied to the suffering pulp under considerable pressure from the dressing. If the saliva is to be kept out, the secretions of the pulp must be pent up. It probably does not matter much to the pulps, for I think they nearly all die sooner or later, excepting those exposed in excavating a cavity and capped immediately, especially such as are situated at the extreme corner of the chamber.

I believe that the practice of capping these particular exposures is sound in science. The cap stands in the protective relation to the pulp of splints and cradles in the treatment of surgical injuries. Less apparent is the wisdom of swabbing all exposed pulps with caustics, such as carbolic acid, or such escharotics as creosote. Exposure of pulp in excavating a cavity ought to be far less common in the region of the body of the pulp than in the corner. The most skilled operator will occasionally lay open the pulp in this region, and his one object should be to allow the minute wound to heal rapidly. The operator who cuts his finger with an excavator, wraps up the injured digit carefully to protect it from all irritating fluids. Who would think of pouring carbolic acid, creosote, or oil of cloves into a small clean wound? Yet this is how we treat a healthy pulp, and we are taught to fill the tooth at once, instead of waiting for the suppuration, which is a very rational result of our treatment. Many advanced men would reply that the carbolic acid is directed to the immolation of the germs, albeit there is no apparent reason that a pulp should be attacked by this ghostly influence more virulently than a finger. The antiseptic treatment is fashionable now, and it would have been strange if it had not found its echo in our advanced science.

We are told that germs have been discovered everywhere about cavities in teeth, but I do not remember anyone proving that they did any harm, or made the cavities. If the germs have to wait until the cavities have been formed, then their influence becomes of a very feeble importance. I see no great objection to wiping over an exposed pulp with a very weak solution of carbolic acid, say 1—40, as advised by Lister for the spray, but that does not prove that germs will not get access to the pulp through the dental vessels. Stinking pus, full of all sorts of germs, is said to have been obtained from a sub-periosteal abscess of the thigh. The only obvious explanation is, that germs circulate freely in the blood. In my own mind I look upon germs in themselves as rather harmless little bodies, permeating all the structures of the body at will, and mildly indifferent to the action of carbolic spray.

The treatment of devitalised pulps I leave an open question for discussion to-night, for I feel daily more anxious to adopt Mr. Coleman's treatment in toto, and thus to escape the tedious process sometimes stigmatised as "pulp grubbing."

Polypus of pulp is not a very common disease, and is chiefly interesting in so far that it may possibly be confused with polypus of gum and in its leading to enlargement of the apical foramen. These polypi are covered with granulations, to whose eroding powers the enlargement of the canal is probably due. The growth must be entirely destroyed if the tooth is to be saved, but I think the results are not very favourable.

Calcareous formations in the pulp are common in the advanced periods of life, and are possibly analogous to the calcareous degenerations of arterial walls and of cartilages. The secondary formations may occur as a uniform narrowing, even to obliteration, of the pulp chamber, or as a granules that coalesce into large masses, causing acute pain by pressing on the fine nerve structures of the sensitive pulp. The new electric mouth illuminator is said to reveal the presence of large deposits, and I believe that it will do so in well-marked cases.

Senile atrophy is the last stage of a moribund old pulp that has escaped active disease, but yields at last to natural causes. The very term suggests a plausible pathology of retrograde changes. The loss of perceptive power wanes with the conversion of nerves into fibrous tissue. The vessels lose their contractility, and become closed with embolic and thrombic plugs, and the spark of vitality fades out of a useless and *effete* organ.

THE following States have passed dental laws: Alabama, Georgie, Illinois, Indiana, Kentucky, Louisiana, Michigan, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina and West Virginia.

COMPARATIVE DENTAL PATHOLOGY.

By John Bland Sutton,
LECTURER ON COMPARATIVE ANATOMY, &c., MIDDLESEX HOSPITAL MEDICAL COLLEGE, LONDON.

(*Continued from p.* 207.)

CHAPTER II.—ABNORMALITIES OF GROWTH

In this chapter it is proposed to deal with irregularities of growth in the following order: (1) Excessive Growth, or Hypertrophy; (2) Arrested Development; and (3) Atrophy.

It rarely happens that the two extremes of growth, *excessive* and *arrested*, occur in the same individual, and in the same series of organs, to such an extent as that presented by the male narwhal (*Monodon monoceros*).

In this singular creature, the adult male usually possesses a tooth growing from the left maxillary bone in close relation to the maxillo-premaxillary suture, and therefore regarded as a canine, which often attains to the length of 8, 9, or even 10 feet, with a basal diameter of 4in. The corresponding tooth of the opposite side usually undergoes development up to a certain point, attains the size perhaps of 6in. but its pulp chamber undergoes calcification before it has time to make its way out of the alveolus, so that it remains concealed from view throughout the lifetime of the animal. Occasionally, however, this right tusk undergoes development, and attains to the size of the left one. Mr. J. W. Clark (10) has investigated this question of two tusks, and has given a *résumé* of the matter in "Proceedings of the Zoological Society," 1871. He states that even bidental skulls of this animal exist in different European museums. He further states that the right tusk is never developed alone; when a single one is present it is always the left, although some very excellent books possess figures of a right solitary tooth. Professor Turner has noticed the existence in the fœtal narwhal of two rudimentary teeth, all traces of which are lost in the adult skull. Another point of interest in connection with these teeth is the spiral which winds round them from right to left. In speaking of the spiral elephant's tusks it was noticed that the deformity was the result of injury of the growing pulp; it is a remarkable fact that the skull of the narwhal presents a singular asymmetrical condition, so that the facial portion of the skull appears distorted; and it is a noteworthy fact that when two tusks develop, the twist of the spiral is in the same direction in both, as regards the skull—right to left—whereas they appeared unsymmetrical in respect to one another.

Contemplated from a pathological standpoint, these teeth are intensely instructive; though now the normal condition for this creature to possess a single elongated tusk, we can but regard it as an enormously hypertrophied tooth put to some use, probably essential to the well-being of the possessor. Whilst the stunted rudimentary denticles noticed by Professor Turner indicate atrophy, whereas the tusks of the female and the right one of the male, concealed within the alveolus, their pulp chambers obliterated by secondary dentine, furnish excellent examples of arrested growth, and the spiral turn depicted on the overgrown tusk speak plainly of malformation due probably to some disturbance of the formative pulp whilst the animal was yet in embryo. I know of no parallel to this in the animal kingdom—extreme hypertrophy, excessive atrophy, arrested growth, and malformation, exhibited in the dental armature of a single animal.

Excessive Growth.—As might be expected, the majority of cases illustrating excessive growth occur in animals whose teeth grow from persistent pulps; consequently the rodents furnish the most extensive series of cases in this respect. The abnormalities due to overgrowth of the teeth may be conveniently divided into two classes :—

1. Excessive growth with normal antagonism of the teeth.
2. Excess growth the result of loss of antagonism of teeth.

It is a well-known fact that the growth of the incisor teeth in rodents is unconditional ; if their edges are not kept in check by constant usage they may give rise to all sorts of serious consequences. The teeth of a beaver in the Zoological Gardens grew to such an extent that the animal could no longer open its mouth, and in order to prevent its dying from starvation, the creature was slung up and an inch of each scalpriform lower incisor was removed, much to its comfort and well-being. Dr. Murie recorded a similar operation which was conducted on an alpaca, but expresses some surprise "that the teeth should continue to grow after being cut in this unceremonious manner." Of course this event is not at all astonishing, provided the pulp cavity be not disturbed. I have now observed several cases in which the above operation has been performed more than once on the same animal ; indeed we cannot regard the action in any other light than that it is equivalent to cutting the hair on a horse's tail.

(*To be continued.*)

Aqueous Shellac Varnish.—Saturated solution of borax, two parts ; powdered shellac, one part. Shake together without heat. The shellac will dissolve in two or three days. This can be used for a starch gloss also.—*Pharm. Centhralhalle.*

British Journal of Dental Science.

LONDON, MARCH 15, 1884.

THE USES AND ABUSES OF SOCIETIES.

We see around us a speedy multiplication of dental societies; Leeds, Sheffield, Bradford and Birmingham in the provinces, now boast of societies started with the view of promoting professional union, and of affording a means of ventilating fresh ideas, and of seeking from others the expression of their opinion upon problems which crop up in the outpatient room or operating chair. But are these societies going to promote the well-being of their members, or to prove merely fungus excrescences, here to-day and gone to-morrow? The answer to this question must be found in a consideration of their methods of doing their work, the programme they set themselves and the way they attempt to carry it out. To be of use, a society has very largely to depend upon its officers; but besides these it has to adapt itself to the desires and requirements of its members and that large and important class of "would be" members. There is usually a fear that in attempting too much, a society collapses.

Although much good may be derived from listening to formal papers, elaborately "got up" and read in due course before the society; yet it cannot be denied that as it is usually the younger and less experienced men who write and read these papers, they only too frequently lack experience and practicability.

If truly "social evenings" were planned, and some well known subject were chosen, out of which many side-issues naturally arise, and there is no dearth of such, and were brought before the meeting by a speaker who possessed some special knowledge and a little tact, many men would be set talking whose lips remain sealed before more formal assemblages, and who would bring forward the most valuable of all criticism, that based upon personal observation. Once make your gatherings formal and the majority of workers sit mum-chance, while the men who derive their experience by reading, offer glibly enough, strings of authorities and theories as new as they are ephemeral. Comparatively few men have the time to devote hours of perhaps uncongenial labour in "working" up cases which have occurred in the day's practice, but if the opportunity offers they would be ready enough to narrate these cases, and to enforce their views upon them, and to support their treatment or ask their *confrères* what practice their experience might suggest. Conversational meetings are not only more easily arranged, but, if well managed, are more profitable, and certainly far more agreeable to the audience than all the more stiff and formal assemblages when papers have to be waded through and laboriously discussed, discussed only too frequently in a purely perfunctory fashion.

The practice of presenting "card specimens" is undoubtedly one which should recommend itself to dental societies. Were this method to be adopted it would undoubtedly effect a ready and valuable means of disseminating facts. To narrate very briefly upon a card less than a foot square, the particulars of any case shown, or model which may be exhibited, takes but little time, and so makes but a small claim upon the energies of the exhibitor, or of those who examine the case at the society.

An evil, instances of which we meet with, alas, only too frequently, exists in the unprincipled employment of a society's meeting for personal aggrandizement, and personal pushing which can only be regarded as the twin sister to advertising. As we said above, upon the officers devolve practically the onus of making a society a success or a failure; while a judicious secretary will keep things pleasantly smooth with the thinnest materials wherewith to work, one who lacks the knowledge of men or the personal influence, such an indispensable element in success, will stifle discussion and stamp out the vitality of even the most robust association.

As a body, dentists lack *esprit de corp* and social societies where all meet alike—for a caste distinction must be most invidious—are much needed if only to cultivate fellow feeling and community in aim. The old days when every man's workroom was a palladium wherein no outsider might enter, have gone, but there still linger in some consulting rooms a faint spice of mystery and glamour which might be dispensed with most beneficially. There can be no doubt that in the interests alike of the profession and the public such mysteries are the reverse of useful. The intercourse of man with man must tend to alter all this, and so upon another side we come upon an additional reason for favouring the establishment and promoting the increase of societies among dentists. There is one word of warning we would add. It is this: no non-members should be looked at askance, let a practitioner join or refrain from joining as seems him best, in the former case, welcome him, in the latter, win him and convince him by the excellence of the work done, that the society is worth his attention and adhesion. It is in some cases made almost a "test" whether or no a man's name appears upon the books of a certain society. This is not as it should be, it is a mistaken policy which cripples the society and lessens very considerably the field of its usefulness.

THE DENTISTS' ACT.

An editorial note which appears in a contemporary, brings out, into bold relief, one of the glaring blots which exist in the Dentists' Act. A gentleman, who holds the diplomas of the College of Surgeons of England, and the College of Physicians, is told he cannot be registered as a Dentist; but, and here the absurdity comes in, he may practice Dentistry, and even call himself Dentist or dental surgeon. It matters not one jot whether such a one possesses special knowledge, it is what we have repeated again and again—every surgeon is assumed to be a skilled Dentist! Such a monstrous absurdity bears its own refutation upon the very face of it. Perhaps a more "distinguished example of a muddle" is not extant! A.B. may be a M.R.C.S., he is legally qualified to practice Dentistry, and yet the medical council refuse to register him; and so while, with the one hand, they encourage him to practice, with the other they refuse to recognize his status as a practitioner! We have heard of the "circumlocution office," but never we aver, had Dickens a better example of official muddling than the one which is now before us.

PRESENTATION TO SIR EDWIN SAUNDERS.—A graceful ceremony was gone through upon the 12th of March; for the particulars of which we must refer our readers to another page. In a most hearty and well-chosen speech, Mr. Rogers bade farewell to the distinguished chairman, Mr. Eric Erichsen, and that gentleman replied in as happy a strain. It further fell to Mr. Erichsen to present the portrait, and this he did in due course. Speaking, in returning thanks, Sir Edwin Saunders, after expressing his sense of pleasure and gratitude in very telling phrases, took occasion to explain and defend the line of policy which has been pursued in acquiring and building the present hospital.

This most fortuitous meeting must prove a source of pleasure to all concerned in it, and gives promise of a brighter future than the somewhat sad vein which flowed through Sir Edwin Saunders' speech would lead one to anticipate. Exertion and steadfastness has done much; liberality and community of interest will, if they have their way, do more!

BOGUS DIPLOMAS.—We hasten to warn our readers that the iniquitous sale of bogus diplomas has of late been rife in London. The diplomas purport to be granted by the Wilmington, Del. Dental College.

DISORGANISATION OF THE KNEE AFTER ENGINE WORK.—Mr. A. W. Freeman writes to the "Independent Practitioner" narrating his sufferings and ultimate mutilation which arose if not directly at least indirectly from his use of the dental engine. In 1882 he noticed the swelling of his right knee, a swelling which was accompanied by severe pain. He had had several slight knocks from time to time while working his engine, but had taken no notice of them. The joint trouble was diagnosed as being of a rheumatic nature, and treated accordingly. Later on, symptoms developed and the joint had to be laid open, but with no avail. The end of the matter being that the limb had been amputated. It is noteworthy that the neuralgic pains in the nerves preserved in the stump were excruciating.

Such cases are truly "Warnings to the Profession," as Mr. Freeman terms his case, the prolonged standing and the strain imposed by constant engine work do undoubtedly predispose to synovitis just as they produce sciatica. Any blow, even the most trifling, will under these circumstances excite the most dangerous inflammation, and one only too likely to terminate in the same deplorable manner as it did in Mr. Freeman's case. We cannot enjoin too much care and heedfulness upon those dentists who habitually make use of the engine.

ANGELSTEIN'S TARTAR.—Many stories are extant of the brusque Dr. Angelstein. Some of his poorer patients suffered much at his hands. It has been said that he extracted every tooth shown to him as being painful. When one was extracted he would send away the poor victim and call for a second. If anyone uttered a cry he was called a coward. After an instrument a species of key of a most barbarous pattern was invented; he used it almost exclusively. Sometimes the tooth was too small or too large for the forceps, and the gums were torn and a fracture of the alveolus took place. Dr. Angelstein often broke off a piece of the alveolus but was not at all confused, turning to the patient he would say roughly, "another time brush the tartar off your teeth better." The saying became so prevalent among his pupils that to this day we hear of Angelstein's tartar when a piece of the alveolus gets fractured.

DEATHS FROM ANÆSTHETICS DURING 1883.—Dr. Jacob, Physician to the Leeds Public Dispensary, writing to the "British Medical Journal," gives the following statistics of "Deaths from anæsthetics" during the past year:

Deaths from chloroform—

Normanton, a woman during dressing a sprained ankle.
Lasswade, a man during amputation of a finger.
St. Mary's Hospital, a boy during opening abscess of knee.
Inverness, a woman during extraction of a tooth.
Glasgow Western Infirmary, excision of tongue.
N. E. Hospital for Children, abscess of ankle.
Bristol Infirmary, operation for hernia.
St. Mary's Hospital, enucleation of an eye.
New Brighton, fractured ribs; patient died in an epileptic fit.
Liverpool, removal of tumour.
Belfast Royal Hospital, strabismus.

Next we have to consider the deaths from chloroform and ether:

Bristol Infirmary, examination of abdomen, breathing failed, tubercular peritonitis and phthisis, found P.M.

Lastly, one dead from nitrous oxide which, as our readers will remember, occurred at the Dental Hospital.

If we analyse these cases several curious facts come out.

We must, however, guard ourselves against supposing that the deaths recorded above represent the true mortality. We have ourselves recorded several cases which do not appear in the above list, and many deaths occur in practice, both in surgeries and the smaller hospitals, which never find their way into print. It is noteworthy that three deaths occurred in operations about the mouth, two being for extraction of teeth. All the operations were of comparatively a trivial character, none of them being such as would be likely to introduce that uncertain item "shock." The cause of death may be grouped as in six, the anæsthetic, in one, asphyxia during excision of the tongue, in one from impaction of food in the glottis from vomiting, in one from an epileptic seizure. The solitary death from nitrous oxide was attributed to syncope, occurring before the operation. The number of recorded deaths shows a falling off from preceding years. It is further noticeable in that it contains a death from nitrous oxide, an agent commonly but inaccurately assumed to be an absolulely safe anæsthetic.

INDEX MEDICUS.—This most valuable contribution to the time-saving appliances of the age, gives a most accurate list of all the works which are published, and classifies them under a subject heading, so that one can discover at a glance all the recent literature which has been issued on any particular field of research. It is with much regret then that we learn that the support given to this most meritorious venture of American enterprise is too slender to warrant its continuance. It seems to us that as the Index Medicus is of cosmopolitan range, it should have enough support in England alone to make it pay its way. Those of our readers who are not acquainted with it would do well to look it up and support it as far as possible.

THE LAW AND THE DENTISTS.—In the "Centralblatt für Zahnheilkunde," a writer informs us that the first laws which were passed to regulate the practice of Dentistry, originated in France. To this is attributable that high repute in which French dentists were for a while held. Let us contrast the outlook of to-day, when France owns the poor distinction of being the only civilised country in which any one may term himself "Dentist" and practice as such without let or hindrance. What a falling off was there!

TRACHEOTOMY FOR THE EXTRACTION OF A TOOTH FROM THE LEFT BRONCHUS.—Dr. Robert F. Weir reports in the "New York Medical Journal," the case of a young woman who was having a tooth extracted under ether, when it slipped from the forceps and was drawn into the left bronchus. Its situation could be well determined. After the patient was placed under the influence of ether she was turned head downwards, but this failed to dislodge the tooth. Tracheotomy was then performed, and a pair of dressing forceps, bent at four inches from the end to an obtuse angle was introduced, but the tooth could not be grasped. A long untwisted loop of slender silver wire was passed down until by good luck it came in contact with the tooth, the forceps passed over it caused it to take hold, and the tooth was removed. Rapid recovery ensued.

Injurious Action of Tobacco.—A. C. Gorgas, in his report upon the Naval Academy, at Annapolis, says in reference to the use of tobacco: "Since my last sanitary report I have had abundant occasion to verify all that has been said against the effects of tobacco upon growing youths. . . . I found among the cadets instances of its effects upon muscular co-ordinative power and upon the action of the heart, which more than confirmed my own former observations and the statements of others upon the subject. In the drawing department of this school, it has long been recognized that excessive smoking impairs the control of muscular co-ordination, and the head of that department has been able to detect the smokers by the character of their work in the sketching room." . . . .

A Good Anæsthetic.—The Tri-State Medical Association, at Indianapolis, recommended the following mixture as an anæsthetic: bromic æther, 1 part; alcohol, 11 parts; chloroform, 3 parts. This is a vastly different mixture to the old-fashioned trio, the A.C.E. compound.

Third Dentition.—The following curious case is reported by a writer in the "Southern Dental Journal." It appears that during a journey, the writer tarried at a house and rendered some professional services. He noticed a young lady, who possessed an unusually handsome set of teeth. He left, but after the lapse of six months, he found himself in the same house. He was told that, by an accident, one of the beautiful teeth—a superior central incisor had got knocked out. He advised that a piece of wood should be worn between the other central and the lateral. After another interval of time, the dentist again visited the house, and then found that another tooth—third dentition—had made its appearance. It was well-formed, and in every respect like a normal permanent incisor.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

NEW NICKEL-PLATED SPITTOON BASIN.

Mr. Josiah Ritchie has introduced a new metallic spittoon basin for pedestal use, made of sheet zinc nickel-plated, of the ordinary funnel shape, and of the usual variety of sizes to fit the existing holes in the receivers. In appearance it is precisely similar to the metal-plated basins of spun copper, but lighter and more than proportionately less expensive.

SIMPLE HEATING BURNER.

Mr. A. J. Gear sends us a very simple form of gas heating burner, capable of easily being made to substitute any ordinary fish-tail nipple on gas arm or gasalier. It is in the form of an inverted cone about two inches high, of brass, with a circle of small holes just above the screw that attaches it to the gas arm, and a fine wire gauze covering the broad opening at the top, which is arranged for easy removal by a brass cap. It thus combines the Bunsen with the soft flame of the gauze burner, and might be very useful for warming modelling composition and other purposes, giving, as it does, a circular flame of about one inch diameter.

COMBINED INSTRUMENT TABLE, SALIVA EJECTOR, SPITTOON, LAMP, AND WATER RESERVOIR.

Messrs. C. Ash and Sons have manufactured a most elegant and comprehensive apparatus, as represented by woodcut. With nickel-plating, glass, and ornamentation it is very handsome indeed. The engraving gives so accurate an idea of its usefulness that little else is necessary. It may, however, be mentioned, that it is provided with the ordinary Allan's table and bracket lamp, nickel-plated spittoon with blue glass funnel, two tumbler holders, and that an important improvement has been made in the saliva ejector by placing the india-rubber tubing lower down the stem to give the water a greater fall from the reservoir, so creating a greater degree of suction.

Abstracts of Foreign Journals.

REVUE ODONTOLOGIQUE (*January*).

The opening paper discusses the question of establishing a dental school in Belgium, but we make no further reference to this subject at present, since its discussion requires more space than we have at our disposal.

Dr. Quinet next passes on to discuss the "Analogies between the Hair and the Teeth." The present is an introductory paper. In the fœtus the hair and teeth present closer similarities than in the adult. They are shown both to spring in an analogous way from a matrix or follicle. They offer two distinct periods in their evolution. The first commences with the appearance of their formative organs, the epithelial organ, bulb or papilla, and the follicular sac, and terminates with the eruption through the skin (hair) or mucous membrane (teeth). It is according as in this stage the development is normally carried out, that the structure hair, or tooth, finally assumes a physiological or a pathological condition. These last have been but little studied in the case of hair.

The second period commences with the eruption of the teeth and closes with the shedding. Having established these two periods, Dr. Quinet gives the divisions into which he purposes to divide his subject. Passing on he describes various examples of analogies and homologies.

Touching upon the immense importance of embryological studies, the vast treasures of knowledge which recent researches in that study have given us, he finally lays down that in embryology we shall find a close analogical bond connecting the hair with the teeth.

TRANSACTIONS OF THE DENTAL SOCIETY OF THE STATE OF NEW YORK.

"Carbolic Acid," by Frank French, M.D.S., Rochester.

Creosote is obtained from wood tar, carbolic acid from coal tar, the former occurs in the dry distillation of wood. It was discovered in 1832 by Reichenbach; it possesses the following properties: characteristic tar-like odour, burns briskly in the air. It coagulates albumen, does not act upon fibrin, is only slightly soluble in water; but is so in ether, alcohol, acetic acid, and the essential oils. Carbolic acid is a common impurity of creosote. Carbolic acid is soluble in water, 1 part in 95. Then several tests are given whereby this body can be tested for purity. It was discovered by Runge in coal tar, in 1834.

In 1865, M. Déclat pointed out its power of destroying micro-organisms and checking fermentation and putrefaction. Lister in the same year employed it as a surgical dressing. As a therapeutic agent its use is invaluable as it possesses stimulant, narcotic, irritant, styptic, antiseptic, and escharotic properties. All the lower forms of vegetable organic life are destroyed by carbolic acid; fermentation moulds and mildew and seed germs are destroyed by a 100th or 200th part of this acid. A strong solution applied to the roots of trees kills them; bacteria and infusoria are destroyed, so are ascarides, earthworms, caterpillars, fleas, moths, ants, and other insects. Fish, frogs, leeches, also die under its influence; a few drops applied to the wing of a sparrow causes convulsions and death. A five per cent. aqueous solution given to dogs gives rise to cough, convulsions, sensory and motary paralysis. On man, six or eight grains in a wine glass of water give rise to a sense of numbness followed by one of coldness. Upon an empty stomach nausea is induced, followed by vertigo tirmitus and deafness.

The usual signs of corrosive poisoning are found after death. In fatal doses unconsciousness appears, the breathing is stertorous, the surface cold, heart's action is feeble, respiration slow, and death gradually follows. The urine becomes a dark greenish, blackish smoky colour. Städelar believes he has discovered carbolic acid in normal urine; this is doubtful.

Atropia is a physiological antagonist of great value. The use of carbolic acid internally will arrest nausea and vomiting. Eructations of gas, and flatulence, due to fermentation of food, are arrested by it. One per cent. is useful in chronic nasal catarrh, hay fever, whooping cough; it is employed as a parasiticide; it is advised in typhoid fever, diphtheria, scarlet fever, and erysipelas. It is used extensively as an antiseptic in surgery. Antisepticism is next entered upon and its mode of action described in some details. Carbolic acid, suitably diluted, has been found useful as a dentifrice in carious teeth, and for the relief of offensive breath. It relieves pain caused by an exposed pulp frequently, it is advisable to apply it before arsenic. Some operators claim to be able to extirpate the living pulp painlessly by the use of this agent. When the nerve is exposed and it is desirable to maintain its vitality, the carbolic acid must not be employed very strong. When applied to a cavity prepared for filling, a painful burning sensation is experienced for a moment, this is is probably due to its action upon the ends of the contents of freshly cut tubuli. It is an excellent dressing for nerve canals after removing the pulps. Some operators use a pledget of cotton, saturated with carbolic acid to close the apical foramen For filling nerve canals it is highly recommended, also in all forms of abcess, especially in treatment of alveolar abscess, and our author is in the habit of employing it in full strength when a fistula exists. The paper is closed by the reference to vinegar, which is stated to be a perfect antidote for the action of carbolic acid.

A brief discussion followed upon reading this paper.

"GOLD RESTORATION of Abraded Dentures," by E. Parmly Brown, D.D.S., Flushing, N.Y.

Mechanical abrasion with chemical erosion of the human teeth causes absolute helplessness; tọ show how this abrasion and erosion occurs is next described. During mastication the mechanical abrasion occurs while the secretions of the mouth give rise to the chemical changes. We find it stated that until cohesive gold became properly handled, no remedy was known for this unfortunate condition of the teeth of mankind. The vital statistics of a savage land in the Pacific tell us that the inhabitants become old at forty-five, and then die of starvation, having worn their teeth away by eating roots. Similar condition exists among the Esquimaux. Grinding of teeth during the night is said to produce the same result. Dr. Brown deems it a duty of the dental profession to stop this disease. He says, if we have gold, "beautiful and cohesive," let us employ it and so prevent the abrasion; to place gold into cavities of decay is lengthening abraded teeth. The different methods of employing gold are then considered. There are three distinct ways of producing the desired effect. "First, screws inserted in the tooth at safe distance from the enamel and pulp; second, a grove cut around the pulp, and as much inside enamel as best suited to the case; third, a number of retaining pits drilled just inside of enamel, and safely away from pulp, with some concavity in centre of crown, if possible, and a bevelling of enamel margins from 20 to 30 degrees."

The writer prefers the pit method to the groove as a blue line may appear in the latter case. He quotes many cases in which he had cause to retain the gold filling, and in all of these a good result ensued. He then digresses to take up the subject of dental fees, and emphasizing the impossibility which existed formerly of having done such rapid work, he says it could not have been done without the electro-magnetic mallet, without which he could only crown four teeth in a single day; with its use he achieved eight in the same space of time. He next passes under review cases of abrased teeth which occur in the crania found in the Catacombs of Paris. He says, "I found that the abrasion of the teeth has been about as common with Parisians for some years past as it is to-day; but caries of the teeth not near so prevalent as now, it being difficult amongst hundreds of skulls to find one maxilla where the teeth were gone at time of death."

After examining 3000 crania in the Hunterian Museum, London, abrasion of the teeth was found to have a world-wide prevalence, and the percentage was about as high in the past as at the present time. Some stress is laid upon the fact that nervous complaints are more common now, and that they give rise to grinding of the teeth, which is said to produce the same result as the coarse food formerly in use.

THE DENTAL JAIRUS

Leads off with an address by Dr. G. W. Sichel of San Francisco. It is said to be on behalf of the Alumni Association of the Dental department of the University of California. In this paper several points in ethics of the profession are passed under review, and the most of all, practitioners maintaining their individual dignity is emphasized, as by so doing they promote the well-being of the profession at large.

"Cheap Dentistry" is the title of the next paper, and comes from the pen of Dr. R. H. Morton, this paper was read before the San Francisco Dental Society. He says that many who have found their home in San Francisco, are not so good as they should be. He draws attention to the catchpenny form of advertising so much in vogue; cheap, he goes on to say, does not always mean low prices; good work is the cheapest in the end, cheap dentistry is not new. The East had matured several crops of these barnacles before California was known.

The next paper is upon "Gutta-Percha;" and is by Dr. W. D. Kempton, of Cincinnati.

Gutta-percha, our author says, has been much abused, but he believes unjustly. The inherent properties of gutta-percha are, 1st, Solubility in chloroform; 2nd, Insolubility in the mouth secretions; 3rd, Its plasticity when slightly warmed; 4th, Its non-conduction of heat; 5th, Its non-irritating character. The importance of the first property lies in the adaptability of gutta-percha for filling nerve canals. It is important for two reasons: it does not require absolute dryness of the cavity for the insertion of the filling, nor does it engage solution at the cervical margin, so common in fillings of cements. It is most essential for deciduous teeth as its use does not require the rubber-dam or the accompanying clamp. In sensitive cavities where the pulp is not exposed pink gutta-percha, such as is used for base plates, is essential, since on account of its plasticity it requires little or no pressure. The cavity being cleansed with a syringe and tepid water and dried with absorbent cotton, the gutta-percha is to be gently pressed into place with warm (not hot) instruments. If the cavity is not of a good shape an excavator should be used, when the filling is to be removed this can be done painlessly by employing a warm instrument. It is essential in buccal cavities of molars which are sensitive and extend beyond the free margin of the gum. It is also essential for temporary stopping. It is essential in stopping incisors after rubber has been inserted, if space between them, may be filled with gutta-percha.

DEUTSCHE MONATSSCHRIFT FÜR ZAHNHEILKUNDE.

(*February*).

"Duplication of the Lower Jaw," by Dr. G. Niemeyer. A doubling of the lower jaw in any individual admits of a twofold explanation. It may be a consequence of a certain over-productiveness of the person, or it may be part of some other only partially formed person, a so-called parasite. The first case Magitôt designates polygnathic, the second is commonly called epignathic. Cases have been known among animals. Geoffrey St. Hilaire describes a calf's skull with two lower jaws. Magitôt speaks of fourteen known cases, ten amongst animals and four amongst men. One occurred in a boy, normal in other respects. He had a swelling between ear and chin, in which was found an incisor and a bone with several teeth. Another case was that of a girl who had a great swelling in which was found a kind of lower jaw. Both these cases belong to the class epignathic. A third case was a tumour taken from a girl of fifteen months' old, with congenital division of the lower lip and lower jaw. The tumour was about the size of a turkey's egg, containing teeth. There was a fourth case brought forward at the Academy of Medicine in June, 1875. It treated of a still-born female child, with a tumour adhering to the symphisis of the lower jaw and the under surface of the tongue. The tumour striking chiefly through its unusual size, contained a second rudimentary under jaw.

In 1882 there was a case in the surgical hospital, in Bonn, of actual duplication of the under jaw. Elizabeth B., fourteen years old, had at her birth a swelling on the left curve of the jaw. As the child grew, the swelling increased. At seven years old a tooth appeared, followed by six others. The outer ones became so embarrassing that the four outer teeth had to be extracted from the pseudo jaw, also the upper canine tooth. In 1882 the patient complained of a swelling between the two rows of teeth, and said that in the place of the four teeth, which were extracted, two had again appeared. Between the two rows of teeth of the under jaws runs a projecting gum swelling, into which the corresponding teeth in the upper jaw press, upon shutting the mouth. This bears thirteen teeth, and is unsymmetrical. Professor Frendelerburg limited himself to the excision of the disturbing gum swelling. In this case we plainly have to do with a rudimentary second lower jaw, and not with a tooth bearing peripheral exostosis of the normal lower jaw. The two alveolar curves are seen plainly developed. In the under jaw on the right, from 1882, the canine teeth were for three years lacking. The development continued as in the upper jaw. The left half remained unchanged, the canine and second molar teeth were absent. The reappearance of teeth in place of the extracted incisors was curious.

"THE Central and Provincial Unions of German Dentists."

The question as to whether the provincial and local unions hurt the central union was much discussed at the central union last year. We hear that local unions existed in Saxony and Hamburg before the foundation of the central union. Herr Fricke the founder of the central union wished to encorporate them into it. While the local unions in Berlin, Dresden, Hamburg, and Breslau gave little sign of life, the Frankfort and Schleswick-Holstein unions became prominent, and their reports showed that they were in a position to fulfil their *raison d'etre*. Then the central union began to fear that the local unions, and especially the Frankfort union, would be prejudicial. But Herr Dr. Tyeihmann, at the gathering of the Frankfort union in 1879, said that "since its foundation it had been and always would be a branch union of the great central union. He said we are the children of the central union. In 1863 we thanked them for our origin, and we have at all times received some support from them. We should then strive to help them in their usefulness, for unity is strength."

The excellent position of the town of Frankfort in the heart of the German kingdom, and the personal invitations to 300 German Dentists, have caused its gatherings to be largely attended. Herr Paulsau undertook the defence of the Frankfort union, and said it was much to be deplored that the German kingdom, with its many great towns, had only six local unions. He said the central union could only reap advantage from the local unions, as they became sections of the central union, and brought the members together in friendly union, raising their position in the opinion of the public. It is, of course, to be wished that local unions should not exceed their bounds as the Frankfort union appears to have done through its invitation to 300 Dentists. A member of the dental profession says local unions may prove prejudicial to the central union if they send invitations to all the provinces of the fatherland, and if their gathering takes place shortly before that of the central union. Otherwise, every German Dentist should welcome the provincial unions, for through them their position is more firmly established. Subjects can be more generally discussed, and the central union be strengthened.

In the "German Quarterly for Dentists," 1867, it is said that Mr. Wait, in England, wished to form local unions of Dentists like those which are so numerous in America, and which add so much to the general and individual interests. It was Dr. Hartung, at Rudalstadt, who first gave expression to the fear that the central union might suffer through the local unions, but he appears to think differently now, for he is on the point of establishing a provincial union for mid-Germany. We have seen what a strong organization will do in the case of the gymnastic societies; those many small unions which gradually spread over Germany have brought about the feeling in high places that gymnastics are a necessity for the national and healthly formation of the people. So should an attempt be made to found in every great town and in every province, a provincial or local union, which unions should send delegates to the gatherings of the central unions, to take their part in all discussions.

"Use of Alkaloids in Dentistry."

Whilst our ancestors commonly treated patients with purgatives and cataplasma, these methods are, in our own day, too much neglected. One contents himself too easily with local treatment. For the treatment of toothache Stevens has lately used with success a number of alkaloids generally administered internally. Aconitia, atropine, cicutin, hyoscyamus, morphia, codeia, digitalin, veratria, iodine, &c. Small grains have been used, says Prof. Dr. Burgraene, with success. Stevens recommends the use of these alkaloids chiefly at the beginning of pulpitis, and in *dolor post operationem.* As the greater number of these alkaloids are very dangerous, one must be careful not to follow Stevens' method without caution.

THE SOUTHERN DENTAL JOURNAL (*February*).

"THOUGHTS upon some Questions affecting the Professional Standing of Dentists," by Dr. L. C. F. Hayor, Washington, D.C. The paper opens with the statement that considerable disaccord exists between the medical and the dental profession, arising probably from faults on both sides. Medicine has already passed through her period of sickly youth. Dentistry is still hampered by a want of robustness. Dental education is unsatisfactory. Diplomas are issued in absentia; the standard for graduation at the dental colleges is deplorably low for two reasons: Firstly, the average capacity of the candidates, who apply for admission, does not admit of any severe test. Secondly, the dental colleges are not under statutory protection. As remedies, it is suggested no Dentist should take a pupil incapable of producing preliminary qualifications. The Dentist himself should remember that his duty as a preceptor makes him responsible to a great extent for his pupils future. Statutory protection is said to be greatly needed. Again, the curriculum at the colleges should ensure a wider grasp of the subject, comprised in the words "oral surgery." As a matter of fact most affections of the mouth are now relegated to the family doctor, rather than to the Dentist. This should not be so. Stress is then laid upon the importance of having endowed colleges, and so rendering them independent of the number of students who may be attracted to them. The paper further deals with the question, "Is Dentistry a speciality of medicine?" A question, the answer to which, must be postponed for the present.

(*To be continued.*)

"LETTERS from a Mother to a Mother on the Formation, Growth, and Care of the Teeth."

Letter 12. *Filling the Baby's Teeth.*—This letter narrates how an "ancient babe," aged eleven months, suffering from whooping cough, and a carious speck on one of his upper incisors, had the said speck removed by sharp instruments, and the cavity filled. At three years old the cavity was again filled, but with gold. The moral of this episode is of course—take your babies early to the Dentist. We fear English babes would hardly submit to have their cavities filled during sleep, as we are credibly informed was the case with this baby. It is urged that children should be taken at intervals of not more than a month or two, to see the Dentist, for the following reasons: 1. Because the teeth are needed for daily use. 2. Because a great deal of pain and sickness will be prevented. 3. Because if the teeth are sound, the general condition of the child will be maintained. 4. Because regularity of the permanent teeth largely depends upon the healthy condition and retention of the deciduous set.

Letter 13 deals with the untoward consequences liable to ensue if the permanent molars are allowed to decay, under the impression they belong to the milk teeth. These molars are specially important. 1. They are ready for service during the shedding of the deciduous teeth. 2. Being the largest teeth in the permanent set, and being the centre of the arch, they are the principal ones in the whole wall. "They are also opposite the duct which furnishes the largest portion of the saliva for the preparation of food for digestion." Being liable to early decay they need constant attention, and, if necessary, filled or refilled. The eruption of the other teeth is then described, and due attention to the teeth pressingly urged. "It is said, on the authority of the United States census, only one person in eighty has sound teeth, while two hundred years ago, the proportion was one in five."

Letter 14. *Causes of Decay—Prevention.*—Preventive treatment is urged upon girls—nutritious diet, regularity of habits, exercise in the open air, hygienic dress, are placed first. The natural conditions of the teeth are then passed under review—all acid food, fruits, drinks, medicines, tooth-washes or powders, are injurious to the teeth, if allowed to remain about them. Rinsing the mouth with alkaline wash is commended. Scrupulous care should be used in cleaning the teeth after food; cracking nuts and biting threads must be desisted from, since the practice is liable to injure the enamel. Very hot and very cold drinks are prejudicial. Dr. Richardson is quoted to the effect that artificial foods replacing breast milk cause decay. A large mouth full of large teeth is commended to all "those who wish to marry," as being preferable to a little rosebud of a mouth.

Letter 15. *Diseases of the Soft Tissues of the Mouth.*—The causes of diseased condition of the gums may usually be referred to neglected teeth, food débris, incrustation of tartar, &c "Gumboils are the result of disease of the pulp preceded by decay." Prevent decay, and you prevent gumboil. Lime-water is again brought forward as a panacea for diseased mouth conditions.

"CARE OF THE TEETH—Tooth-brushes—Dentrifices," &c., by Dr. C. E. Kells. (Read before the New Orleans Odontological Society.)

Caries exists mostly upon the approximal surfaces of the teeth. It is due to the improper use of brushes. "Give me," the learned Doctor says, "the care of a given tooth, sound, and in perfect condition, and I will promise to keep it free from caries, providing I can polish each service twice daily." The daily use of dental floss silk is advocated. "The ideal tooth-brush" should be curved—its back shaped to conform to the dental arch—the bristles must be of equal length. The bristles must be short, in order to reach the buccal service of the molars, in spite of the taut masseter and buccinators muscle. The bristles must be a medium stiffness; hard bristles injure the gingival margins. Dr. Kells makes it a practice to teach his patients how to clean their teeth, keeping a dummy set of gums and teeth for that purpose. Speaking upon dentrifices, soap is stated to be a useful lubricant, but a powder is requisite to remove adhering partic'es. Carbolized powder or precipitated chalk are the best powders to be used. Mouth-washes are often useful, and mouth-flushing should be carefully performed. Summarizing, the writer says, "I have attracted attention to, first, the brush; second, the dentrifice; third, the use of both. Upon these depends the salvation of the teeth, and corresponding joy in the hearts of the possessor."

Review.

Students' Guide to Dental Anatomy and Surgery. By HENRY SEWILL, Member of Royal College of Surgeons and Licentiate in Dental Surgery; formerly Dentist to West London Hospital. Second Edition. London: Messrs. J. and A. Churchill.

IN opening pages written by so well-known an expert as Mr. Sewill, one is tempted to ask much at his hands, and to look for every possible fact which has become common property at the date of his work's *début*. A students' guide has alike open to it to be of incalculable service to beginners, or on the other hand, if it be badly put together, it may hamper him rather than assist, mislead rather than instruct him as to the way he should go. We see in Mr. Sewill's book the impress of a practical man's practical mind. If his *dicta* be *ex cathedrâ* we are inclined to bow to his teaching, for nothing can be more detrimental in a students' manual than divided counsel; to be a good teacher one must be a good dogmatist, only two cautions are needed. Our dogmata should jump with the very newest opinions which are generally received, while we should provide the more advanced student with opportunities of extending his studies. To aid in this last object, we find a list of some twenty-two books or articles, bu we cannot help thinking that so excellent a plan as that here adopted might have been extended to cover a wider field. Thus we find but little reference to developmental subjects, or the kindred topics of the physiology and pathology of the teeth, as exemplified by ethnology or comparative odontology.

The size of the volume before us prevents of course any of the many themes, which it passes under review, being treated at all fully. Thus, in the first section we find the microscopic structure of the various concomitants which go to make up the teeth are, but cursorily described, and the whole section seems hurriedly written, for we find a good many omissions, either of newly-discovered facts or merely verbal. On page 2, and again on page 5, the teeth are described as if we possessed but one jaw; taken literally, we are said to own but sixteen teeth. The question of survival of implements, whose original uses have no longer any existence, is ignored, and we are told that the canine teeth are "for cutting or tearing," a mode of eating not common, at least in Europe.

It is hardly accurate, again, to say that the lower molars have five cusps apiece, for the second nearly always has but four. We must again take exception to Mr. Sewill's very brief exposition about cement. Surely it would be wise in a text book to delineate clearly the differences between cement and common bone, as of course their variation is obvious enough when demonstrated. The canaliculi are described as having "protoplasmic contents," but we fail to see what benefit such a statement can be to a beginner when enunciated without a word of explanation.

In the second section we have presented to us a very clear and accurate account of the development of the teeth. This is followed by a section which treats of the growth of the jaws and the first and second dentition. Succeeding pages describe abnormalities, and enter at some length into the pathology and treatment of dental caries. The concluding sections deal with the diseases common to pulp, cementum, &c.

The book is a handy size, and we trust will remain so, as nowadays the most unpretended manuals assume a colossal size before they have reached many editions, and so lose half their merit. Perhaps one of the most attractive features of the book is the illustrations. They are numerous, well done and accurate, and cannot fail to lend very considerable help to the student as he peruses the manual. There can be little doubt of the merit of the volume before us; and although the latter sections are certainly the best, yet the book as it stands forms on the whole a trustworthy and agreeably written manual for students.

Literary Notices and Selections.

SYPHILITIC TEETH.

From the French of Alfred Fournier.)

By J. William White, M.D.,

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

The hereditary influence of syphilis frequently, though not invariably, affects the dental organs, and manifests itself in diverse lesions. Although all the subjects of hereditary syphilis do not present the dental malformations which we are about to describe, there are nevertheless enormous numbers in whom these lesions will be met with.* An examination of the dental organs, therefore, constitutes an important element in the retrospective diagnosis of hereditary syphilis.

Cases where hereditary syphilis has been suspected, but has only been recognized through indications primarily furnished by the state of the teeth, need not be cited, being so numerous and so familiar. In many instances hereditary syphilis has, to the great benefit of the patients, been diagnosed solely through the unique dental malformations.

An illustrative case occurred in the practice of Paget: A young girl was afflicted with a serious lesion of the nose, which had been pronounced lupus, and had been treated as such. Paget, in examining this patient, was astonished to find dental malformations of a kind that are usually concomitant with hereditary syphilis. Nothing else that would lead to the supposition that she was affected with syphilis was found. Nevertheless, for this reason alone it was decided to use anti-syphilitic treatment. The supposed lupus was cured in six weeks.†

The interest which attaches to the subject of the influence of syphilis upon the teeth, and the agitation in scientific circles to which it has lately given rise, are sufficient reasons for the discussion upon which I will enter without further introduction.

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* It is as yet impossible, I believe, to determine by reliable statistics the frequency of these lesions in hereditary syphilis. I have tried to establish a record of this kind, but was compelled to give it up for the time being for the reason that in a great number of recorded observations upon late hereditary syphilis, no mention of the condition of the teeth is made. The absence of information on this point, however, does not prove that the teeth did not exhibit abnormities, but merely suggests that no attention had been paid to this peculiarity.

† See "Medical Times and Gazette," 1862, No. I., p. 309.

The hereditary influence of syphilis shows itself in the dental system in two ways, very unequal in point of diagnostic value, viz.: First, by a retardation of evolution; second, by the arrest of growth and by modifications of structure.

A few words will suffice for the consideration of the first. The hereditary influence of syphilis causes occasionally a retardation more or less marked in dental evolution. This is a peculiarity which has been recognized for a long time. So long ago as the last century Sanchez called attention to the tardy dentition of infants born with syphilis. The same fact has been noticed since then by a number of authors, notably in our time by a most competent specialist, Dr. Magitot. I have in my note-book several cases of syphilitic children who have not begun to "cut their first teeth" before ten, twelve, fourteen, or fifteen months. This retardation of evolution applies generally to the entire denture. It has been noticed, however, to be limited, in some cases, to one group of teeth—the incisors, for example. We find it especially in the first dentition, in the reports which I have been able to consult on this subject. Some cases show that a similar retardation occurs in the eruption of the permanent teeth.

This retardation of evolution is in some instances very marked. Demarquay relates the case of a syphilitic child who, at the age of four years, had not a single tooth, and who (a most curious and significant peculiarity from a pathogenic standpoint), could not yet walk. M. Lancereaux has likewise described a "true arrest of development of dentition," in the case of a syphilitic child, who was at the same time microcephalic, idiotic, and epileptic. At the age of twelve years the lateral incisors and the cuspids hardly extended beyond their alveoli.*

This retardation of dental evolution is but a localized expression of a more general fact, viz., the retardation of development among persons affected with hereditary syphilis. The evolution of the individual, that which is commonly called the *growth*, occurs but slowly and in an imperfect manner, in the cases of syphilitic children. The dental system participates in this disposition of the whole being; a fact curious in itself and even possessing some interest in the way of retrospective information, but it could not carry much weight in diagnosis.

Inherited syphilis implies numerous other troubles in the constitution of the dental organs which afford us more valuable means of diagnosis. For convenience of study and facility of remembrance they may be divided into four principal groups: first, dental erosions; second, microdontism—the reduction below the physiological average of the volume of certain teeth; third, dental amorphism—that is, certain teeth lose more or less the attributes of their proper class or type; fourth, vulnerability—the dental organs being more readily acted upon by the causes of attrition and disorganization; in other words, rapid wear, ready change, and early decay of certain teeth. Add to these four principal groups some peculiarities of a rarer kind (such as, for example, irregularities of alignment, anomalies of reciprocal arrangement, &c.), and you will have very nearly the complete programme which offers itself for our study.

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* "Traité de la Syphilis," second edition, p. 442.

It is to teeth affected in one or other of the preceding ways that the name "syphilitic teeth" is given; an incorrect term, but one sanctioned by usage. One might think that an imitation of what is called the syphilitic testicle, the syphilitic liver or kidney, the "syphilitic tooth" should be a tooth which, having been normally constituted, had been affected later by syphilis; but what is meant by this term "syphilitic tooth," is a congenital dental malformation, originating from syphilitic influence, a deficiency of development stamped by syphilis on a tooth yet unformed, and during what constitutes, if I may so speak, its fœtal life; in other words, the consequence of the pathological action exercised by syphilis upon it during its *intra-follicular* development.

A few words upon the history of the subject, before taking up the special descriptions. It was in England that the study of the influence of syphilis upon the teeth first arose, and it is to Hutchinson that the credit of originating it is due. It is in England, also, that the question has been most discussed and is most generally known. It has given rise there to a truly scientific agitation, which quickly popularized it. Among English writers these syphilitic teeth, "typical teeth," are recognized as an element in the diagnosis of hereditary syphilis. In France, on the contrary, we must acknowledge that the subject is as yet little known. Despite the remarkable works of Professor Parrot, of Dr. Magitot, and of some of the latter's students, investigation has extended very little beyond a limited circle of practitioners more especially devoted to syphilitic diseases or to the dental art. It has not reached the general medical public, and at present we know very little of the clinical value which an examination of the teeth may possess in the diagnosis of hereditary syphilis.

(*To be continued.*)

Notices of Societies.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Ordinary Monthly Meeting, held Feb. 4th, 1884.

J. Smith Turner, M.R.C.S. and L.D.S.Eng., President, in the Chair.

(*Continued from p.* 235.)

The **President** remarked that he had a patient then under his care for whom he wanted to fit a crown to the stump of a six-year old molar, but whenever he attempted to clear out the anterior root such a free hæmorrhage occurred that he was obliged to plug the canal and leave it. This had happened several times. He had advised the patient to have the tooth extracted, but he would not consent, so he (Mr. Turner) felt obliged to persevere a little longer in the hope that this trouble would eventually disappear; but he felt quite at a loss to account for such an unusual complication.

Mr. **Geo. Parkinson** showed a sequestrum removed from the lower jaw of a boy nine years of age. The boy was brought to the Dental Hospital by his mother, who stated that one of his teeth had been extracted, rather roughly, as she thought, at a General Hospital four months before; much pain and inflammation followed, and this had never subsided. An abscess was pointing externally. An incision was made over the swelling inside the cheek, when a quantity of matter escaped and bare necrosed bone could be felt. A large sequestrum, with the twelve-year-old molar attached, was then removed with forceps. The parts quickly healed, and the threatened external opening did not take place.

Mr. W. **Coffin** said he had a case under treatment which might be worth mentioning. The patient, an officer, was thrown from his horse, and received somewhat severe contusions of one side of the head and face. Soon afterwards signs of necrosis of the upper jaw began to show themselves, and although the actual extent of the necrosis could not yet be clearly made out, he (Mr. Coffin) feared that the whole of teeth side would be lost.

Mr. F. J. **Bennett** asked Mr. Parkinson whether any loss of sensation had followed the removal of the sequestrum in the case he had just mentioned. In a somewhat similar case which had come under his own observation, he found that the lateral and canine were sensitive on the damaged side, but that all the teeth behind the canine were insensitive.

Mr. W. E. **Harding**, of Shrewsbury, said a case had lately occurred in his practice about which he should be glad to ascertain the opinion of the members. A gentleman had the crown of a lower wisdom tooth broken off in an attempt at extraction, and some further injury must have been done, since the operation was followed by much pain and local inflammation. A fortnight afterwards he came to Mr. Harding, who with some difficulty removed the roots. Then an abscess formed followed by constant discharge of pus, and at last a sequestrum was found and removed. It proved to be a large piece of the body and ramus, but there was no trace of the inferior dental canal to be seen on it. Notwithstanding, loss of sensation in the teeth and lower lip followed the operation, and what he (Mr. Harding) particularly wanted to know was whether his patient had any chance of regaining sensibility in these parts in course of time.

Mr. Chas. Tomes remarked that if the nerve was merely torn across at one point it would usually readily unite, but if there was actual loss of substance this could not be expected. He had recently come across a cabman from whose jaw he had removed a sequestrum, involving the inferior dental canal, ten years ago, and the man told him there had been no return of sensation on that side.

Mr. Coleman said that a patient had once been brought to him by a surgeon to have a tooth extracted, a large abscess, which appeared on the point of opening externally, having formed below it. The tooth was extracted, but no discharge followed, and the surgeon then suggested that an opening should be made into it through the alveolus. He (Mr. Coleman) accordingly thrust an excavator through the bottom of the alveolus into the abscess sac; free discharge of pus followed, and the opening of the face was prevented. He thought the proceeding thus suggested to him might be useful to others under similar circumstances.

Dr. Walker mentioned the case of a man who suffered from most agonising paroxysmal neuralgia, affecting the right side of the face. He (Dr. Walker) having removed several carious teeth without benefit, the patient was admitted into Westminister Hospital, where Mr. Pearce Gould exposed and stretched the superior maxillary nerve, but the operation only gave relief for three weeks, after which the pain returned as bad as before.

Mr. R. H. Woodhouse said he remembered removing at the hospital a sequestrum, showing a section of the inferior dental canal nearly an inch in length, from the lower jaw of a woman. Complete loss of sensation in the parts supplied followed, and the sensibility was never regained.

Mr. Geo. Parkinson said that, in the case he had brought forward, sensibility had not been effected.

Dr. St. George Elliott then explained the rsesult of his comparative experimental tests of some of the numerous amalgams in general use. He said he had read a paper in August last, at the meeting of the American Dental Society of Europe, at Cologne, on the behaviour under various conditions of about forty of the most prominent amalgams now in the market; but, not being quite satisfied with the results of some of his experiments, he had objected to their publication until he had had the opportunity of repeating the investigations with increased care and precautions against error. For the last five months he had been actively engaged in this inquiry, yet even now it was far from being completed. His object had been to obtain some reliable data as to the relative value of the various kinds of amalgam experimented upon, to find out under what conditions they could be used with the greatest advantage, and generally to ascertain how far their properties really answered to the description given of them by their respective makers. The points to which he had given most attention were, first, with regard to shrinkage, and, secondly, to breaking strain. To ascertain the amount of shrinkage he had noted the variation in the specific gravity of each sample, as shown by a balance which turned at the $\frac{1}{1000}$ of a grain,—contraction of the amalgam being of course accompanied by a proportionate increase of the specific gravity. The breaking strain had been measured by making a number of discs of each sort of amalgam, taking the utmost care that they were all of exactly the same diameter,—each being 7·30 millimetres in diameter by 1 millimetre (about $\frac{1}{25}$ inch) in thickness,—and subjecting them to a crushing apparatus, the amount of force necessary to effect this being accurately registered and noted. Fifteen discs of each kind of amalgam—viz., five each of dry, medium, and soft—were thus tested, and the mean of the results thus obtained was given as the breaking strain each kind would bear.

It was found that most of the amalgams experimented on continued to change during the whole week, and that during this interval they passed through some very curious variations. It was also found that, in order to obtain the best results, some amalgams should be used wet, some medium, and others as dry as possible, these results being sometimes altogether opposed to the directions sent out by the makers. Of course, "wet" and "dry" were only relative terms, which could only be judged of by physical characters, and could not be accurately defined. By "dry" he meant that as little mercury had been used as would suffice to make a workable compound; by "medium" he meant the condition in which amalgams were generally used; and by "soft" he meant very soft indeed. Sullivan's amalgam gave the best results when mixed of medium consistence, and was better soft than dry; whilst Ash's was best used soft. With regard to the so-called "expanding" amalgams, his table showed that this expansion was only obtained under certain conditions, and not under all, as had been generally supposed; thus "Fletcher's Expanding" only expanded when used dry, and not always then. In testing Stewart's Sullivan's amalgam dry for the crushing strain he had found a curious tendency to lamination in some of the discs, making it difficult to get them to stand any crushing strain whatever,—a tendency which would be calculated to lead to bad results in actual practice. He thought that some such investigation as that which he had attempted was the only way in which a reliable opinion could be formed as to the relative value of the various amalgams. The results obtained by their use in the mouth afforded a very unsafe guide, since these depended largely on the character of the secretions and the care taken of the mouth by the patient. Nor was the price charged for them any indication of their practical utility. He trusted that the results he had obtained would afford some assistance in this direction, but he hoped to be able to continue his experiments, and in due time to arrive at still more definite conclusions.

(*To be continued.*)

Dental News.

THE DENTAL HOSPITAL OF LONDON.

The Twenty sixth Annual Meeting of this institution was held at the hospital, Leicester-square, on Wednesday, under the presidency of John Eric Erichsen Esq., F.R.S., one of the Vice-Presidents. The report states that 35,622 cases had been treated during the year 1883, a large number of them painlessly (under anæsthetics). That Sir Edwin Saunders had made a munificent gift to the charity of the lease for over 90 years of the "Tower House," adjoining the hospital, valued at £2,400, for the purpose of its enlargement. That this generous gift makes the amount of the contributions of Sir Edwin Saunders exceed £4,000. That a special appeal had been issued for the funds necessary for fitting up and adapting the new wing, and for redeeming the mortgage debt of £5,000 on the hospital building, and the Managing Committee gratefully acknowledged £1,132 4s. in response. That there is still a deficit of £3,865 6s. 6d. in the Extension Account, and the Committee are compelled to make a further special appeal for the funds necessary to pay off this debt, which presses so heavily upon the charity, and materially curtails the benefits it wolud otherwise be enabled to confer upon the suffering poor; and also to replace the funded property, amounting to £1,943 7s. 10d., they were compelled to sell for the part purchase of the freehold of the hospital.

The charity is unendowed, and increased funds would enable it to greatly extend its usefulness.

MIDLAND ODONTOLOGICAL SOCIETY.

The first ordinary meeting of the members and friends will be held at the Medical Institute, Edmund Street, Birmingham, on Thursday, April 3rd, 1884, at 7 p.m.

Mr. Thomas Hawkins, M.R.C.S.Eng., will preside and deliver his presidential address.

Mr. Richard Owen will read a paper on the "Degeneracy of Dental Tissue and the Dietary Influence of Silicated Phosphates."

Exhibition of dental specimens. Casual communications.

[We have authority for stating that at this, the inaugural meeting of this new society, all reputable practitioners are invited to be present and will be heartily welcomed.—Ed.]

BENEVOLENT FUND OF THE BRITISH DENTAL ASSOCIATION.

A meeting of the Managing Committee of this Fund was held at the office of the Association, 40, Leicester Square, on Monday, March 3rd. The Treasurer (Mr. A. J. Woodhouse) submitted the following financial statement up to March 1st, 1884, inclusive:—

Donations promised . . .	—			£671	2	6
Subscriptions promised . .	—			154	6	0
				£825	8	6
Donations paid . . .	£558	2	0			
Subscriptions paid . .	129	14	0			
				687	16	0
Donations outstanding . .	113	0	6			
Subscriptions outstanding .	24	12	0			
				137	12	6
				£825	8	6

Applications for relief were received in four cases, of which three were postponed for further consideration, and one was recommended for immediate relief in the event of certain inquiries proving satisfactory. As applications are likely to be numerous, it is obvious that ample funds will be needful to meet the necessities of urgent and deserving cases.

The support this fund has so far received, may be looked upon as satisfactory and encouraging, but as its benefits will be extended to the profession at large, and not to members of the association only—as was at first intended—it is now desirable that the whole profession should support the fund, from which all will derive advantage should occasion arise.

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

(*Continued from p.* 183.)

The SECRETARY agreed with those gentlemen who had spoken to the order of the eruption of the permanent teeth, as laid down by Dr. Kingsley, and yet he thought it would be found that what the Dr. says as to the canines being the last of the temporary teeth to leave the jaw, was very frequently departed from. He had found this to be the case in his own family. The canine teeth, both temporary and permanent, are certainly most important ones, and should not be removed except as a *dernier ressort.* They seem to occupy a rapidly enlarging portion of the jaw, and to act as sentinels to keep those posts in their full contour. It occurred to him that a good deal of irregularity was due to the form and development of the jaw—independent altogether of the size of the permanent teeth or the order of the shedding of the temporary ones, and heredity. The removal of the six year old molars, if at all decayed, is conducive to the health of the remaining teeth, and also to their spontaneous regulation, should they be out of place or if crushing or overcrowding existed. He had had several cases of regulation, where he removed the second bicuspids, and would not hesitate *now* to remove the first instead of the second ones, as a great deal of annoyance and time may thus be saved to the patient and to the operator, and with more satisfactory results.

He did not think with Dr. Kingsley, that it is immaterial whether the first teeth remain or not until the second ones show themselves. On the contrary, he had always found it otherwise; the jaw proper may go on growing, but the alveolar processes do not to the same extent, or in the same ratio. With regard to the other matter mentioned by the Dr.—"Is it the pushing forward of the permanent tooth that compels the absorption of its temporary predecessor?"—he most emphatically adopted the affirmative view, and moreover, thought that when a permanent tooth in coming to the surface missed its mark, (*i.e.* its temporary predecessor), deflection of that permanent tooth from its proper course was the inevitable result. The removal of retained temporary teeth, at or near the edge of manhood, is and must always be a doubtful proceeding, as the alveolar processes then become dense and rigid. The regulation of teeth has often been discussed, and while agreeing with Dr. Kingsley as to the desirability of retaining the canines, thoughtful judgment must be the guide in conjunction with experience of other cases, as each must be treated for its own requirements.

Before concluding, Mr. FINLAYSON desired leave to emphasize the caution given to the Profession by Mr. Weiss, at the meeting of the Odontological Society, in December last, as to the unfortunate results which sometimes happen from the accidental slipping of a band of india-rubber on to a tooth, and its subsequent burrowing there. Such a case occurred in his practice lately, and was only discovered in time to save the life of the tooth, which got suddenly loose and much elongated. He urged the necessity of exercising the utmost care to prevent this from happening, as, unless the bands were tied to the studs they might at any moment be unshipped and find their way almost to the apex of the root before being discovered.

The PRESIDENT said they all agreed that the order of the eruption of the permanent teeth was normally that given by Dr. Kingsley, and that any course of treatment founded on any other would be far more likely to produce irregularity than to prevent it.

He regarded the retention of the deciduous upper canine as of the greatest importance, and had no doubt but that it was due to its premature removal that the hopeless case of which he showed the model—(transposition of canine and lateral)—was produced. The same explanation would also apply to a case which he had brought before the Society some years ago, in which (the lateral incisors being suppressed) the canines came in between the bicuspids.

He did not place any special value on the lower canine, as while in the upper jaw they had the crypts of the permanent lateral and first bicuspid in actual contact (that of the canine being on a higher level), in the lower jaw the crypt of the canine was interposed, so that the removal of the lower temporary canine, as spoken to by Mr. Price, was quite likely to answer his purpose with little risk of harm.

The increased space required by the larger permanent incisors is gained in the upper jaw by these teeth being less vertical in direction than their predecessors.

He considered that Dr. Kingsley did not place sufficient value on the retention of the temporary molars, and more especially the second. These occupied a much larger space than the bicuspids which replaced them, and the surplus would naturally go far to assist the canines, if the permanent molar were allowed time to become a fixture before their removal, otherwise the space was lost.

As to those cases in which a temporary tooth firmly retained its position beyond the normal period, and there was no symptom of the presence of its successor, he declined to remove it. He had seen cases in which deciduous canines and second molars were doing their duty well, thirty years after they should have been shed.

Turning now to the removal of *sound* permanent teeth, he objected to the removal of the canines, unless under very exceptional circumstances, preferring to remove the first bicuspids or even the lateral incisors, to make room for irregularly placed canines. He quite agreed with Mr. Macleod as to the little room gained for the teeth in front by the removal of the first permanent molars. There was undoubtedly a gain by their removal, about the age of twelve, if much decayed, as improving the position of the posterior molars.

He did not believe in the idea that the removal of the temporary teeth was likely to lead to contraction of the jaw, the presence of the crypts of the permanenton ones preventing it.

As to the dependance of the development backward of the jaws, on the presence of the molar germs, they had been told that in cases where these were suppressed, the jaws retained the form and size as in childhood.

The separation which normally took place among the temporary teeth, he referred more to a moving outwards of the teeth, thus widening the curve, than to any interstitial growth of the jaw.

He passed round the model of a lower jaw, showing on both sides an irregularity not noticed by Dr. Kingsley, the cause being, in his opinion, the premature removal of the first permanent molars. They would see that a wide diastema existed between the bicuspids, the second having evidently come to the surface, behind the temporary molar, which tooth had most likely retained its place long after the normal time.

As to the cause of the absorption of the roots of the temporary teeth, and so of their being shed, he certainly leaned to the view—that it was the absorption of the roots of the temporary teeth, and their alveoli, which permitted the advance of the permanent ones into their places, at the same time they knew that pressure affected absorption very decidedly.

The absorption of the alveolar border was carried to an extent far beyond the seeming requirements of the case. In those mammals which have a horizontal in place of a vertical succession, the absorption of the roots went on all the same.

There was also the fact, that in some cases a layer of bone was found covering the permanent tooth, even after the temporary one had been shed.

He had much pleasure in thanking Mr. Price for having taken the initiative in what had been to him a very pleasant discussion.

CASES OF INTEREST.

Mr. STIRLING showed some models of regulating cases, amongst which was one of the upper teeth of a young lady, about fourteen years old, on which he wished to ask the opinion of the meeting as to what should be done. The case was more interesting, because the young lady's mother had consulted four dentists, and got four different opinions on it. The left canine tooth stood very prominent between the lateral incisor and the first bicuspid, the space between these two teeth being only about one-sixth of an inch. The other teeth were all sound and regular in place, except the left first molar, which has now two very small gold stoppings in it. The first advice given was to have the right and left first molars extracted. The second advice to have the left first molar extracted, because it was decayed. The third advice was to have the left first bicuspid extracted. And the fourth advice, "Do nothing at all, the thing will probably come right of itself." The opinion of the meeting seemed to be unanimous in favour of extracting the left first bicuspid.

The PRESIDENT exhibited a very abnormally formed upper lateral incisor, which he had lately extracted. While the labial surface corresponded to that of the opposite lateral, the cutting edge, in place of being linear, was nearly circular, the centre being occupied by a wide conical pit, which extended nearly the whole length of the crown, and was lined with enamel, thus giving much the appearance of a horse's incisor on a small scale.

Mr. AMOORE reported a case of epulis, which recently came under his treatment. The patient was a young married lady, with teeth stronger and sounder than the average. The tumour was situated in proximity to the right lateral tooth, which, with the adjacent central, had been considerably displaced from its normal position; the epulis was, roughly speaking, about the size of half an ordinary Spanish nut, and was pedunculated, being connected with the gum in the immediate vicinity of the lateral. The tooth was removed, the growth excised, and the wound cauterized with nitric acid.

The patient was seen a week afterwards, when a few healthy granulations were noticed, but there was no recurrence of the growth, and a fortnight subsequently the gum presented a satisfactory appearance.

The PRESIDENT then announced that their next meeting would be held on the second Thursday in February, when they were promised a paper on "New Mode of Treating Dead Teeth and Alveolar Abscess," by Mr. Whitehouse, L.D.S.Ed., London.

APPOINTMENT.

MR. L. READ, L.D.S.Eng., has been appointed Assistant Dental Surgeon to the Dental Hospital of London, Leicester Square, *vice* F. Canton, L.R.C.P., M.R.C.S., and L.D.S.Eng., resigned.

FOOD OF THE CHINESE.—The Chinese have no prejudice whatever as regards food; they eat every thing and any thing from which they can derive nutrition—dogs, rats, mice, monkeys, snakes, sea slugs, rotten eggs, putrefied fish, unhatched ducks and chickens. Both in eating and drinking, the Chinese are temperate and are satisfied with two daily meals; rice about 10 a.m. and rice at 5 p.m. The only repugnance I have observed in China, is to the use of milk. I never saw or heard of butter, cream, milk or whey being introduced at a Chinese table.—*Bowring, in Statistical Society Journal.*

A SUBSTITUTE FOR CELLULOID.—A new material has been invented. It is thought it will supersede celluloid. It possesses all the hardness and brilliancy of the latter, and has the advantage of being fire-proof. It is made in this way: A solution is prepared of 200 parts of casein in 50 parts of ammonia and 400 of water, or 150 parts of albumen in 400 parts of water. To the solution the following are added: quick lime, 240 parts; acetate of alumina, 150 parts; alum, 50 parts; sulphate of lime, 1,200 parts; oil, 100 parts. The oil is to be mixed in last. When dark objects are to be made, from 75 to 100 parts of tannin are substituted for the acetate of alumina. When the mixture has been well kneaded together and made into a smooth paste, it is passed through rollers to form plates of the desired shape. These are dried and pressed into metallic moulds previously heated, or they may be reduced to a very fine powder, which is introduced into heated moulds and submitted to a strong pressure. The objects are afterwards dipped into the following bath: Water, 100 parts; white glue, 6 parts; phosphoric acid, 10 parts. Finally they are dried, polished, and varnished with shellac.

PRESENTATION TO SIR EDWIN SAUNDERS.

On March 12th, after the proceedings of the annual meeting of the Governors of the Dental Hospital for London had been held at the hospital in Leicester Square, under the presidency of Mr. Eric Erichsen, the ceremony took place of presenting to Sir Edwin Saunders—who for so many years has been a munificent supporter of the institution—his portrait, to be hung in the hospital. There was a very large attendance of governors and of the medical profession.

The Chairman: Gentlemen, a most pleasing duty now devolves upon me, and I cannot but rejoice that the last act that I should perform in this chair, is one by which I am the medium of doing honour to an old and most esteemed friend and a most distinguished colleague of yours. (Hear, hear.) The formal business of the meeting now being over, we have re-constituted ourselves in order that we may present the portrait of Sir Edwin Saunders to this institution. (Cheers.) In doing so, it is not my intention to dwell at any length upon the services that Sir Edwin Saunders has rendered to the profession of which he is a member. Those services are probably better known to most of you than they can be to me; but there is one service that he has rendered to the profession of which he is a member, which I have had frequent opportunities of witnessing, and of which I may speak from some personal knowledge. Every profession, I need scarcely say, is judged of by the public from the manner in which the members of that profession conduct themselves towards the public, whether in private intercourse or on occasion of public gatherings; and I can most truly say that he does good and great service to his profession—whatever that profession may be—who invariably in his intercourse with the public adopts a high tone, shows himself a cultivated gentleman, and is considerate and tender in his feelings and his behaviour to those who come before him in the form either of patients or of those seeking his advice. Now all those who know Sir Edwin Saunders know well that there is no man in any branch of the profession who can exceed him in those qualities of the heart as well of the mind, by which he has reflected not only much honour upon himself, but credit upon his profession, and the greatest possible boon upon those who have sought his professional advice. (Hear, hear.) In that respect, I think Sir Edwin Saunders has deserved most thoroughly well of his profession as well as of the public. (Hear, hear.) I say nothing of the weight he has in his profession, that probably is better known to you than to me—but the method of doing, the manner of carrying out his duties, and his conduct in all relations of life, are such as not only to reflect credit upon himself, but also the highest credit upon his profession, and more especially upon his particular branch of the profession. (Hear, hear.) And if we are to go beyond this we shall find that Sir Edwin Saunders has truly well deserved the honours that he has gained, for he has not only secured—and was happy in so securing—at an early period of his life, the confidence of the most illustrious personage in this realm, but he has retained it I may say down to the very present time (hear, hear), and that honour which it pleased Her Majesty to confer upon him, might not only be considered a personal distinction, and a distinction conferred upon his branch of the profession, but also a mark of personal favour shown by Her Majesty to a trusted servant, and to one from whom she had received the greatest possible comfort and solace. (Cheers.) But it has not been the lot of Sir Edwin Saunders merely to owe his position to the favour of princes — of him it may be truly said, *Principibus placuisse viris non ultima laus est.* (Cheers.) He has done much to deserve public gratitude and public favour out of his profession. (Hear, hear.) To him we owe it to a very great extent—to his liberality and to his enlightened beneficence we owe to a very great extent the fact that this institution has attained the magnitude, the importance, and the dignity that now characterizes it. (Cheers.) Those services are truly great. They are great to his profession so far as the technical part of the profession is concerned, for no great school of Dental Surgery can exist, as no great school of medicine can exist, without the opportunity is given on practical and clinical training. (Hear, hear.) By his munificence and liberality he has greatly increased the prosperity of the school—indirectly by increasing the opportunities that the school can afford, by giving practical instruction to the pupils. (Hear, hear.) Then how much has he not done in the cause of public charity by assisting as he has done so largely towards founding an institution of this kind, where those who are the sufferers from one of the most terrible causes of suffering that afflict the human race, can always find ease, and comfort and solace. (Hear, hear.) In whatever way we regard Sir Edwin Saunders — whether in his private or public capacity, as a professional man, or in his capacity as a benefactor of this great institution, we must equally applaud his acts. (Hear, hear.) We give to this institution this portrait, which has been painted by the request of some of his friends and colleagues. [At this point the secretary unveiled the portrait, and this disclosure of the likeness of Sir Edwin Saunders was greatly applauded.] It is to be presented by them to the institution with which he has been so long connected in various capacities, and to an institution for which he has done so much in furthering its permanent establishment, and in increasing its utility to the public. (Cheers.) In the name of the subscribers, I beg to present to this institution that portrait which is a true and excellent similitude of our most esteemed and worthy friend, Sir Edwin Saunders. (Great cheering.)

Sir Edwin Saunders (who, on rising to respond, was received with much enthusiasm) said: Mr. Chairman and Gentlemen,—Were it not that I feel I am surrounded by old and faithful friends, and that I may count upon their sympathy, no less than upon their indulgence, I should find it difficult indeed to give any adequate or satisfactory expression to the feelings which have been called up in me by the gracious and eloquent words to which I have just listened. That at the close of a long professional career, I should find that I still possess the friendship and the good opinion of those with whom I have been intimately associated for many years, to whom I was drawn originally by similarity of interests and pursuits, by a certain community of spirit and feeling, still more by earnest and self-denying co-operation to advance our common profession—that I should still possess their good opinion at the end of this career is a subject of unalloyed gratification. That it should have issued in the arrangement by which my name is perpetuated in connection with this hospital, which we have all laboured assiduously to create and maintain, must satisfy the highest aspirations of the most ambitious. Gentlemen, in what you have done I feel that you have done me a great honour, and a great kindness, and you will not be surprised if I regard what you have done, rather in the latter aspect than in the former, for a man can live without honour, but he will be poorly off indeed without friendship. (Cheers). Your kindness, gentlemen, affects me very deeply, as does happen in acts of generosity and kindness, which affect us as deeply as great calamities, but in a different way. And I am reminded now of this by the pathetic words of the Peer-poet, Lord Alfred Tennyson, peerless among living poets. In one of his earlier works—we are all familiar with it—

the story of Enoch Arden, when the wife of Enoch Arden at length despairs of ever again seeing her husband, with failing health and dwindling resources, and having just buried her youngest child, she seems overwhelmed with her accumulated troubles, there comes her faithful friend, Philip, to beg to be permitted to lift them out of poverty and misery; she said to him, "When you came in my sorrow broke me down, and now methinks your kindness breaks me down." (Hear, hear.) So, gentlemen, if I fail, as fail I shall, to express as I could wish what I feel upon this occasion, I hope you will take the blame upon yourselves, and I may exclaim with poor Annie Arden, "Methinks your kindness breaks me down." (Cheers.) This occasion is one of great gratification to me, but like all human gratification, it is not without its shades of sadness. In life, as with art, there can be no true picture without shades. But there are two shades across the picture of to-day with which I could well dispense, and one is that this is the last occasion (as Mr. Rogers has already pointed out) upon which we shall have the privilege to address you as chairman. The last of anything affects one. After a certain period of life, the last of anything seems to have a dismal and depressing ring in it. And I confess a little feeling with me, that we cannot without a pang listen for the last time to the voice to which our hearts have become attuned through years of harmonious communications, or to gaze for a last time in that position upon the personality which we will not willingly let fade from our memory, because it is engraven upon our hearts. (Cheers.) Gentlemen, the other shadow is so personal that I do not know whether I ought to mention it; but it is that I have arrived at that period which is the allotted span of man, and I feel the night shadow falling across my path. I am not one of those, who if asked—"Is life worth living?" can hesitate for a moment, I say, yes—a thousand times yes! (Cheers.) Life, with all its failures, its imperfections, its unrealized aspirations, its physical pain, its mental anguish,—with all these drawbacks, life is very precious, and I would willingly put both these shadows away if it could be so allowed. Well, gentlemen, I turn from this dismal contemplation, and I should like to say a few words as to my connection with this building. (Hear, hear.) It was exactly ten years ago, this very 12th of March,—a day memorable as having been a high festival in London, for it was a day when Her Majesty the Queen brought the Grand Duchess Marie of Russia to present her to the English people as the bride of her second son—and we took advantage of that day to move from our old premises in Soho Square into this building; and I was then able to fulfil a pledge I gave, that in the event of this place in Leicester Square being accepted as our future home, there should not be a day's hindrance in the working of the hospital. And so on that day we were able after all to accomplish this without interrupting the work, for patients and professors alike were out-of-doors showing their loyalty to their sovereign. (Hear.) I would now like to say a word or two about the latest addition to this building—an addition which I think we may say does give very great advantage. (Cheers.) But perhaps it may occur to some that it was a mistake not to have taken this originally. There were, however, two great reasons for not doing so. In the first place, this portion of the building afforded us a very large increase of accommodation, and the change would also have involved a largely increased annual expenditure if we had been rash enough to have undertaken anything beyond what we did. There was another reason, and that was the contemplated widening of the street, and in that case we should have stood at the corner of a new street. But the street improvements have been in abeyance ever since. As to your kindness in placing my portrait in the Hospital, it was not what I expected or what I desired; but I thank you because I believe it was done sincerely. (Cheers.) Shakespeare, that great master of the human heart and human emotions, has given faultless expression to thoughts and sentiments suitable to every variety of character and temperament, and adapted to every condition and circumstance of human life, giving even in the humblest creations, clowns and servant-maids, pearls of wisdom and sparkling diamonds of wit. He has made Ophelia, in a few words of tender reproach, say to the faithless Hamlet, returning him his gifts, pledges of his now forgotten love, "Rich gifts wax poor when givers prove unkind." So, gentlemen, I will say, if it be without sacrilege, "Rich gifts seem richer yet when givers are sincere." (Cheers). And, gentlemen, I believe your gift is sincere. (Cheers.) I believe that it was spontaneous, and the great charm of it is that one line in the report, in which it was said that the amount was subscribed by a few personal friends. If there had been any canvassing, or touting for subscriptions, it would have taken off the charm. But being the kind and generous gift of yours I feel extremely thankful. (Cheers.)

The proceedings then terminated.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the " Editor of the British Journal of Dental Science."

Sir,—In reply to "L.D.S.Eng.," in your last, as to nausea caused by impression taking. It was suggested some time since that the patient should rinse his mouth with a few drops of spirit of camphor in water. But as this is rather unpleasant to use, owing to the camphor not being immediately soluble, I think a litttle brandy preferable.

Possibly, bismuth, soda, and a little acid hydrocyan oil, administered for a few days, would be advantageous in this particular case. Yours, &c., L.D.S.I.

Landore, March 10th, 1884.

To the Editor of the " British Journal of Dental Science."

Sir,—In a paper by Mr. John W. Miller, L.D.S.I., I notice that it is inferred that the Medical profession should have resort more frequently to the use of nitrous oxide gas as an anæsthetic agent. It may interest Mr. Miller and others to learn that the Dentists have by no means a monopoly of this useful agent. I have very frequently indeed administered nitrous oxide gas for surgeons both in hospitals and in private practice, and can vouch from my own experience for the great value of "gas" in minor operations. I may instance among many other operations, those for fistulæ in ano; for internal urethrotomy; for opening abscesses; for ingrowing toe-nails; for breaking down adhesions; for tenotomies; for removal of sebaceous cysts; for slitting up the canaliculus &c., in which I have myself administered gas.

It may not be out of place to warn the Dental profession, in whose hands gas is so largely employed, that its use is not unattended with danger, and so when a Dentist undertakes to adminster gas for a surgeon he incurs a grave responsibility, and one to which his eyes should be well open.

I am, &c., Anæsthetist.

To the Editor of the " British Journal of Dental Science."

Sir,—Will you, or any of your readers, inform me which are the best books to get to enable me to prepare myself for the examination for L.D.S. (*sine curriculo*), Dublin. I am registered, and have had a fair amount of experience in mechanical work, also in extracting, but nothing more. Any hints will be gratefully accepted by Alpha.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From February 1st to February 29th, 1884.

Extractions	Children under 14	448
	Adults	851
	Under Nitrous Oxide	589
Gold Stoppings		269
White Foil ditto		3
Plastic ditto		751
Irregularities of the Teeth treated mechanically		183
Miscellaneous Cases		392
Advice Cases		155
Total		3641

Harry L. Pillin, *House Surgeon.*

MONTHLY REPORT OF CASES TREATED AT THE NATIONAL DENTAL HOSPITAL.

From February 1st to February 29th, 1884.

Number of Patients attended		1571
Extractions	Children under 14	380
,,	Adults	877
,,	Under Nitrous Oxide	315
Gold Stoppings		82
Other Stoppings		398
Advice and Scaling		190
Irregularities of the Teeth		61
Miscellaneous		177
Total		2480

Chas. W. Glassington, *House Surgeon.*

To Correspondents.

Answers to Correspondents.

J. N. Manton.—The matter although of great private interest, is hardly one of professional moment.

Arthur Derwent, Manchester.—Our correspondent must decide what diploma he proposes to apply for, whether English, Scotch, or Irish, and then write to the Secretary of the Faculty for a syllabus of subjects.

Communications have been received from Messrs. Arthur Derwent (Manchester), John Johnson (Accrington), James Taylor (Dewsbury), Dr. Tudhope (Goatbridge), J. B. Sutton (London), H. Sewill (London), T. Gaddes (London), J. Colling Tippett (Torquay), Frank G. Williams (Liverpool), J. N. Manton (Wakefield), William Taylor (Crewe.)

BOOKS AND PAPERS RECEIVED.

"Pharmaceutical Journal and Transactions," "Dental Luminary," "Southern Dental Journal," "Revue Odontologique," "Le Progres Dentaire," "Lancet" "British Medical Journal," "Proceedings of New York Odontological Society," "Proceedings of Odontological Society of Great Britain," ' Dental Record," "Giornale di Corrispondenza pei Dentisti," "Transaction of American Dental Association," "El Progreso Dental de la Habana," "Dental Medicine" (Dr. Ferdinand Gorgas), "Notes on Dental Practice" (Henry Quinby), "Ohio State Journal of Dental Science," "Revue Odontologique de Bruxelles," "Journal of British Dental Association," "Mr. Henry Irving and Miss Ellen Terry in America," "Dental Practitioner."

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WHO FEELS PAIN IN THE GREATEST DEGREE?

By Dr. W. A. Knowles of California.

In the practice of medicine or surgery, where the same operation is frequently performed, it is noticed that some individuals are enabled to endure the pain with much more fortitude than others, and hence the question has arisen as to what class suffers the most acutely.

In excavating teeth for some patients, we have noticed in cases where there was an exposure of the pulp, that no especial symptoms of pain or discomfort was manifested, and, on the other hand, there are others in whom the excavation of the dentine or enamel, or even the handling of a tooth, being, perhaps, but slightly carious, will produce apparently excruciating pain.

Patients have been known to fall asleep while the gold was being maletted into the cavity and in other cases where the dentine was being excavated in a tooth containing a healthy vitalized nerve.

There may be many causes concerned in the explanation of a reason why such different conditions should exist in persons. The law in medicine is that pain is experienced in proportion to the number and size of the nerves involved in such parts, but, were no other point to be taken into consideration, all should feel pain in the same degree; because the nerves are practically similar in all cases.

One cause may exist in the temperament. In speaking of temperaments, the fact should be borne in mind that in almost every individual there is a combination of temperaments, and we rarely find an individual exhibiting but one type. The temperament is classified according to the one or ones which are most prominent in the individual.

Those having phlegmatic temperaments feel pain quite acutely; those of bilious temperament in a less degree; those of lymphatic temperament least of all; but those of nervous temperament are the ones who suffer the "torments of the condemned." The last class of patients are those who feel pain or pleasure most acutely. The nerves must be kept up to a certain pitch or tension, and, remaining at this point, there comes to pass a continued condition of hyperæsthesia of the nerves, and this augmented sensibility is the cause of the pain being more severely felt. There is also a nervous dread excited in such persons, which tends to increase the amount of pain.

If one could be perfectly composed both previous to and during an operation, the pain would not seem so severe, but this condition seems impossible for those of nervous temperament to attain.

Those of lymphatic temperament do not seem to anticipate pain at all, forget all about it as soon as the pain itself has ceased, and do not suffer further until the pain re-commences.

The nervous patient suffers both during the infliction of the pain and the intermissions, and often after the completion of the operation is thrown into a state of nervous excitement which causes, for hours afterwards, a condition as disagreeable as the operation itself. Many ladies are forced to take to bed with a nervous sick-headache, which may last for hours or days, resulting from the exhaustion consequent upon a severe operation upon the teeth.

Trifles are sufficient to cause discomfort to the nervous, and a fly upon a person of this temperament might cause more nervous exhaustion than would a bear in the presence of a person of lymphatic temperament.

Other conditions modify temperaments and render them greater or less in intensity.

Persons of nervous temperament, having undergone sickness, fatigue, excitement, pain, surprise, or one of various other conditions, would find pain to be more unbearable.

There is another point now presented for consideration, which is, who feels pain the most, the physically developed or the mentally developed man? The answer will suggest itself. He who is mentally developed is the one who has the most exalted sensibility to pain or other conditions.

Animals, the type of perfect physical development, feel pain in a less degree than the higher type, man. Their nerves have not been abnormally developed at the expense of their bodily vigour, and there does not exist the capability of transmission of such exalted sensation as we perceive in man. We rarely see the combination in one individual of a perfect physical and a perfect mental developmont. One usually exists at the expense of the other, and where one is found the other is generally absent.

Place a physically perfect man in confinement, and his physical development will decrease and in proportion to its decrease will there be an increase in the nervous development.

Civilization tends to diminish physical perfection and develop mental and nervous powers.

With children we notice a similar condition. Excessive brain application at study causes extreme and exalted nervous sensibility, and here again at the expense of bodily vigour. It may be urged that it is the confinement which causes the physical decline; this, undoubtedly, has to do with it, still perfect physical development is much retarded where the mental powers are over-developed. Uncivilized races, leading lives of toil, hardship, and privation, are better men physically, excepting such as do not receive a proper amount of nourishment, than those who earn their living by means of their brains, and even in our cities, the physically perfect men are generally found to be illiterate.

All portions of the body are developed according to their uses, and the greater the legitimate use (not abuse) the more perfect will be the development.

A newly-born child, having little brain development, feels pain very slightly, and the sensibility increases with the growth of the child; until about the seventh year the brain is not completely developed.

Children will suffer amazing injuries and not seem to mind them particularly; the pain seems to last but a short time, and they are not long in recovering from its infliction. The growth of the body somewhat retards the growth of the brain, and hence, being a small proportion of nerve tissue, the pain is not felt to such a degree.

It was formerly thought that one who laboured physically all day needed more sleep than the mental worker, but its falsity has been proved and it is found to be mental exertion which produces the greatest waste of tissue, and requires the greatest amount of sleep for the purpose of recuperation. The mentally perfect man then is the one who, by the abnormal use and development of his brain, and the hyperæsthesia of his nerves, feels pain the most acutely, and suffers more in proportion than others. The nerves become abnormally sensitive and present to the brain magnified impressions of the amount of pain inflicted, and as pain is measured by the impression produced upon the brain, the mentally developed individual suffers the most. The question now arises as to whether or not we are intended to become so fully intellectually developed. Whether it would not be better to devote more time to physical culture than to the development of the mind. That the Creator has placed within us the *capability* of development of the brain, is, perhaps, sufficient explanation that it is proper; still the physically perfect man is the one who feels pain the least, enjoys life the most, and lives to the greatest age.

Women, as a rule, feel pain more than men. Their nervous development, though not always their mental, is greater than that of men, and their physical development is less perfect. Their sensibility even becomes so exalted as to produce hysteria, and this increases the effect of the pain. The *anticipation* to women of this class is greater than the *realization* to others. While upon this subject there is another point, as to what class of patients is the worst to work for, or, in other words, what class of patients most absorbs the nervous energy of the operator? Experience will teach us that this is produced in the greatest degree when the patient and operator have temperaments which are antagonistic to each other.

ON THE EXTRACTION OF TEETH BY THE NUN'S METHOD.*

By Dr. David.

My reason for drawing your attention to this very old method, to which I have given the name of "the Nun's" process, is that quite recently it has been described as a new one and presented as a discovery to the Société de Biologie by a Dentist of Geneva.

I. This will give me the opportunity of explaining to you the pathological processes of this method, together with its advantages and disadvantages.

The first effect of a loop of thread tied round the neck of a tooth is to cause inflammation of the free border of the gum and alveolo-periostitis. Both of these, at first confined to the neighbourhood of the neck of the tooth, soon extend unless the exciting cause be removed. Moreover, the migration of the thread on the root causes a rapid mortification of the periosteum, so that the tooth becomes diseased, both by the loss of its alveolar attachments, where the periosteum is destroyed, and by the inflammation of the remaining portions. The issue of these lesions varies with the nature of the ligature, the shape and length of the roots.

II. Nature of the ligature.—The ligatures used for this purpose are threads of hemp, flax, silk, or india-rubber rings. When tied round the neck of a tooth, a thread forms a ring, which gets moistened in the fluids of the mouth, and thus becomes tighter by the resulting diminution in its length, and at the same time it increases in thickness. This retraction, round a resisting body which will not yield, tends to make the loop slip towards the thin part of the tooth, *i.e.*, towards the end of the root. The thread acts here in two different ways; as a foreign body by contract only, and as an instrument of penetration through its retractility, which causes it to move towards the end of the root.

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* Abstract of a Clinical Lecture delivered by Dr. David at the Dental Hospital of Paris.

Its contact causes irritation on the one side of the gum or alveolar borders, on the other of the periosteum of the tooth. By its migration it separates the tooth from its connections; thus the dental periosteum becomes detached from the alveolus and mortified. If there were no limit to the power of retraction of the thread the tooth should become detached after a certain time varying according to the length and shape of the root; but this is not the case, and as soon as the point of maximum retraction has been reached the thread is arrested in its course. If the root, however, is very short, the migration of the thread may be sufficient to cause its enucleation. Thus milk teeth will fall out, three or four days after the thread has been applied. If the organ has not been shed by this time the root must be too long, and the retraction of the thread must have come to an end.

After three or four days, in the case of hemp and flax threads, and two or three weeks in the case of silk, the permanent soaking in the fluids of the mouth, and the continuous traction exercised by the ligature itself on its ends, has the effect of unknotting, or at least dissociating it. If it be then close to the neck it falls off, but if it have sunk to a greater depth in the alveolus it is retained, and acts only as a foreign body. In the latter case, however, it usually ends by being eliminated with the discharge from the alveolus, together with or without the tooth, according to the extent of its lesions.

When their size is in proportion to the dimensions of the tooth, india-rubber rings soon make their way to the thinner portion of the root, owing to their special and indefinite elasticity. If the shape of the fang does not prove a bar to the progress of the ligature, the separation soon becomes very great, if not complete. India-rubber ligatures also are very resisting, and are as a rule not destroyed until they have caused very considerable damage within the alveolus.

Thus, if the ligature be not destroyed too soon and if it retains its elasticity, it will end by reaching the very extremity of the root after having destroyed all its attachments to the alveolar wall. The tooth will then be shed. This result is seldom obtained in the case of permanent teeth; long before they have arrived at this point the threads become arrested, decompose and end by falling off. As soon as they have come away the periostitis and gingivitis abate and soon get quite well; the tooth becomes reconsolidated and a little shrinking of the gum only remains, owing to the destruction of part of the dental periosteum.

Occasionally however, more especially in the case of a tooth with several roots, the migration of the ligature becomes arrested by their wider shape and the pathological process remains stationary until the ligature is destroyed and eliminated, or the inflammation ends in a severe and dangerous attack of general periostitis, which may result in the loss of the tooth.

Shape of the Roots.—All teeth present a certain amount of narrowing at their neck; this either ceases after a few millimetres or else goes on increasing towards the apex. On the molars, this constriction is limited by the divergence of the roots which is well marked on the first. On the second and third the separation is not so great; in fact as a rule, the roots of the third are united into a conical cluster. The two lower and the second upper bicuspids are almost conical in shape like the canine; the first upper bicuspid alone, which is normally bifid, presents a certain divergence at some distance from the neck.

In the incisors and canines the narrowing is exceedingly well marked and continuous, owing to the conical shape of their single root.

It will thus be readily understood, that all other conditions being equal, the migration of the ligature should occur with greater ease and rapidity on those teeth which have but a single and conical root than on those with several divergent ones.

This difference in the shape of the roots may be said to lose all importance in the milk teeth. As a rule, in fact, these are but seldom extracted when their roots are still entire. In such a case, the two molars are very divergent, all the others, incisors and canines, are quite conical. At the time they are usually extracted, *i.e.*, at the period of their normal shedding, the roots are worn away, truncated, and their length is of more importance than their shape.

Length of the Roots.—The extent of the alveolar connections, and consequently the firmness of a tooth depends upon the length and volume of the roots. The longer and stronger the root, the more resistance the tooth will offer to the action of the ligatures. It is thus most important, in the application of the Nun's process, to distinguish between the milk and permanent teeth.

(To be continued.)

TRISMUS NASCENTIUM; OR, THE LOCKJAW OF INFANTS.

Its History, Cause, Prevention, and Cure.

Illustrated by Cases and Post-mortem Examinations, with Statistical Table of Two Hundred and Twenty-nine Deaths.

By J. F. Hartigan, M.D., of Washington, D.C.

During the winter of 1877 a discussion arose in the Board of Health of Washington, caused by the continued reports of a large number of cases of this disease by the Medical Sanitary Inspector, Dr. W. D. Stewart, and some of the members expressed decided incredulity in the diagnosis. A committee was appointed to investigate the subject, and in six weeks sixteen cases were observed, two being seen before death. The symptoms presented were so characteristic and uniform as to leave but little doubt of their nature. Three post-mortem examinations, performed by Dr. Triplett, afforded further verification in their anatomical lesions. Thus it may be admitted that there was very good evidence of the correctness of Dr. Stewart's diagnosis. The committee, however, did not agree, either as to the identity of the disease, or its etiology.

About the time mentioned, several of these cases came under my observation, with the curiously uniform post-mortem appearances of congestion of the brain or spine (more commonly the latter), or both, with extravasation, and there was no other lesion observed internally, except engorgement of the lungs. These facts impressed with the importance of determining, if possible, the nature of a disease so fatal within the first month of infantile existence. The Act of Congress a few months later, abolishing the board of health and substituting therefor a health officer, afforded me the invaluable assistance of Dr. D. C. Patterson, coroner of the district, without whose counsel and co-operation in the investigation of these cases the results herein set forth could not have been obtained.

Deaths being continually reported with the train of symptoms of this disease, I made many post-mortems without keeping a record—the results showing only a marked and painful sameness throughout. It certainly seems to require violence, or some mechanical cause, to produce such grave lesions in infants generally well developed, and otherwise healthy. As post-mortems multiplied, perplexity increased, and stimulated desire to ascertain the cause. Text-books were consulted, but most writers treated the subject unsatisfactorily, ascribing every conceivable condition for its development.

The extravasation mentioned, observed in the posterior part of brain and spine, and the relative situation of the bones externally, now attracted attention. It was found that there was usually a depression of the occipital, or that one side was overlapped by the parietal bone. Here then was rational ground for the process of deduction, or induction. Did these appearances demonstrate cause and effect? viz., mechanical pressure of the occipital or parietal bones on the brain, through the intervening dura mater, finally expending its force on the pons, medulla oblongata, and the nerves issuing therefrom—a theory which I soon found had been advanced over thirty years before by Dr. J. Marion Sims, then of Alabama. Time has not changed the views of this distinguished gynæcologist, as I learn from a letter recently received from him, and I believe they will stand pre-eminent in the history of his great achievements, and their truth it will be my endeavour now to establish, with some additional facts.

There is no latitude free from the ravages of this disease. It stands first in the long catalogue of fatal maladies; its advent is sudden and unexpected; life promising well is destroyed in a few hours, turning the joy of parents into sorrow, and blasting their well-grounded hopes. So well known among midwives, especially the coloured grannies, is its fatality that it is common to hear them say, " No use to send for the doctor; babies with nine-day fits die sure."

Hippocrates, Aristotle, Celsus, and Aretæus describe the disease. In the works of Galen it is first named trismus. Moschion and Levret, who figured in the first century, entertained an opinion in regard to its exciting cause—that the stagnant blood in the umbilical cord might produce dangerous disease, in which M. Bajou concurred.

All nosological writers have called this species of trismus, tetanus; which Cullen describes as a spastic rigidity of the inferior maxilla, attacking infants between the second and seventh day from birth, and as confined more especially to cold regions.

Clarke, Chrisholm, and Hilary teach, that in the West Indies it prevails in the worst form. It is called there, and in South America, seven days' disease. Hofer (" Acta Helvetica," vol. i) testifies that it is present in the Helvetian mountains in Switzerland. According to Dr. P. C. Gaillard, " it occurs among the children of the poor in Russia, Germany, Scotland, and Iceland." In the middle of Germany it occurs oftener than any part of Europe, especially in districts where there is no parochial church, thus obliging the mothers to make long journeys to have their infants baptized. It is also common in some of the northern parts, where the infant is swaddled, arms tied by the side, and fastened to a board, being left to lie in this position often for hours at a time, on the back. M. Fourcroy, who wrote a treatise on the subject in 1744, says, that twenty-four per cent. of children born in St. Domingo die of this disease. According to Dr. John Hancock, in Essequebo, Demerara, and neighbouring islands, the disease kills half of the whole number of infants born, and the mortality is at least ninety-nine in a hundred. Mr. Morrison, who practised for several years at Demerara, and Mr. O'Brien never knew one authenticated case of recovery. Dr. Hüpeden says: "In certain colonies of Guayanas, half the children born die of trismus." On the West Manneyer Islands, south coast of Iceland, according to McKenzie, the small number of inhabitants are only kept up by emigration, the disease is so prevalent, carrying off all the new-born. It is referred to in Cleghorn's treatise "On the diseases of Minorca," as being very fatal; and Dr. Maxwell says, in the "Jamaica Physical Journal," "The depopulating influence of trismus nascentium was not less than twenty-five per cent.; it scarcely has a parallel within the bills of mortality."

Dr. S. B. Labatt, in a letter to Dr. Collins, says: "During ten and a half years that I was resident in the Lying-in Hospital, Dublin, I witnessed nearly two hundred cases, and after giving a fair trial to all remedies of repute, in no case when the disease was fully formed did I meet with a recovery." Dr. Evory Kennedy, during his mastership of the hospital, gives similar testimony; and Dr. Collins says of the results of his treatment: "In every instance I have been disappointed."

G. Gaynard believes that the disease is most common in warm countries, and children of negroes seem more predisposed to it. In Africa, on the contrary, the white children are oftener attacked during rainy seasons. He agrees with Matuszynski, and others, who hold that paralysis and death occur only when congestion is replaced by effusion. The most frequent cause is cold, and sudden changes of temperature; he thinks inflammation of the umbilicus can only be a very rare cause.

(*To be continued.*)

There is a new illustrated weekly started called "Woods and Forests," its function is to enlighten the hidden ways of landscape gardening and to expound the mysteries of forestry. There is a lot of technical matter contained in it which must prove very useful to a large section of society.

COMPOSITION FOR PRESSING GOLD PLATES AND METHOD OF USING IT.

By W. Dunn, jun., of Florence.

If any of your readers would like to try the method of pressing metal plates, instead of swaging them between zinc and lead dies, and would wish to make a metal which would answer the purpose, I would venture to offer the subjoined manner of preparing it, which is not at all expensive and not difficult to try.

I do not know what materials enter into the composition of "Spence's metal," but when I first saw a specimen of it, it brought back to my mind some experiments in combining copper with sulphur I had witnessed. I therefore tried to produce something similar for dental purposes, and found, after some trials, the following composition to do very well. Take four ounces of tin and melt them in an iron saucepan; next, take six tablespoonfuls of common powdered sulphur and mix with the molten metal; continue to apply the heat. Soon the mixture will be seen to become red hot in a few spots and then burn with a bright crimson flame, forming a compound which, when cold, is very hard Let it cool and break it up in six or seven pieces. Take and melt them with two and a half times their volume of sulphur; stir well and mix a pinch of resin with it. Let the sulphur burn some twenty minutes or so, then take the saucepan and pour the liquid part into cold water, slowly; put as much sulphur as before, with another pinch of resin, and let it again burn for a quarter of an hour or twenty minutes with the sulphide, and pour again into cold water. While cooling in the water you can take the solid part which has remained at the bottom of the saucepan, pound it fine and pass it through a very fine sieve; then you should take the black mixture of sulphur and resin, which has consolidated in the water and is rather elastic, and boil it with the powdered sulphide, stirring well all the time, adding at the same time a pinch of resin and a few spoonfuls of sulphur, till a little of it, taken up in a spoon and exposed to the air, will harden quickly. The saucepan should now be taken and gently immersed in cold water, gradually letting some of the water flow over the brim on to the composition, by which way it will be extinguished. Now let it cool in the air, when it will be ready for use. It has somewhat the appearance of Spence's metal, only is not quite so hard; it does not break so easily; it can be used over and over again. Care should be taken not to let it burn when using it, and it should always be stirred well before pouring into the mould.

A strong old pattern vulcanite flask serves well to fix the two dies in with plaster of Paris. A good strong screw press is sufficient for pressing, unless very thick plates are desired, when an extra strong one is required.

COMPARATIVE DENTAL PATHOLOGY.

By John Bland Sutton,

LECTURER ON COMPARATIVE ANATOMY, &c., MIDDLESEX HOSPITAL MEDICAL COLLEGE, LONDON.

(*Continued from p.* 252.)

As long ago as 1822, Oudet, in a paper referred to by Goubaux (12), performed some experiments to show that a rabbit's teeth grow after being cut. He wrote as fellows: "If a molar or incisor tooth belonging to a young or old rabbit be cut to the level of the gum, this tooth will after some days assume its former length." The experiment was repeated many times upon the same tooth, and with the same result The animal having been killed some time after, the two corresponding teeth were examined and compared, and in each case there was the same length of tooth in the alveolus. The original paper is published in "L'Académie Royale de Médecine," le 23 Juillet, 1882, under the title of "Expériences sur l'accroissement continué et la reproduction des dents chez les lapins," &c.

Dr. Murie's (11) case of the aye-aye (*Cheiromys*) is also an admirable example of overgrowth in teeth which possess opponents. Careful inquiry into this question of overgrowth of teeth occurring in captive rodents, has convinced me that it is not only diminished usage, but also luxurious living, that contributes to this excessive growth. It is well established that animals in captivity grow fat, and in many cases those born in captivity exceed in size those brought forth in the wild state. It is so with rabbits, and also with regard to lions and tigers; it stands to reason that an animal with its food ready to hand shall grow fatter than one who has to hunt and exert its physical powers to obtain its necessary quantity of aliment; it may not be so healthy, but it grows and increases in size in greater proportion than its wild brother; and that the teeth should share in the general increased rate of growth is not to be wondered at. A striking case in confirmation of this view was mentioned to me by Mr. Charles Tomes. In one of the agricultural papers it was noticed that a question had been raised concerning the age of some prize pigs; the point urged was that the animals teeth did not correspond with their reputed age, and evidence was adduced to show that teeth appear earlier in pigs which are undergoing the fattening process.

I must now pass on to consider the second class of cases, viz., *those in which the excessive growth results from loss of antagonism.* Examples of this class are exceedingly numerous.

Professor Owen (13) mentions the case of a rabbit in which the incisor of the lower jaw was broken, the upper incisor turned a complete circle and re-entered the animal's palate Also the case of a beaver, in which "the scalpriform incisor. has, by unchecked growth, described a complete circle; the point had pierced the masseter muscle and entered the back of the mouth, passing between the condyloid and coronoid processes of the lower jaw, descending to the back part of the molar teeth, in advance of its own alveolus which contains its hollow root."

Other instances have been recorded where the point of the abnormal tooth has described a complete circle and re-entered the pulp chamber. The suffering set up by such irritation as this must be beyond imagination. The curious fact in all these cases is that the abnormal teeth always tend to describe circles more or less complete. It is obvious that this curved condition of the elongated tooth is the direct result of the depth of the socket; but whether they are curved in this way to protect the growing pulp from direct pressure, as some have supposed, I will not pretend to argue; but certain it is that in many instances it is attended with the most deleterious consequences to the bearers of such teeth. (Similiar cases were noted in chap. I.)

Not only do rodents, and other animals whose teeth grow from persistent pulps, suffer from loss of opposing teeth. I have seen a similar thing occur in ruminants. A molar of the upper jaw becomes defective or carious; the corresponding tooth in the lower jaw increases in growth to supply the deficiency. Dr. Murie has figured a case of this nature in his paper before alluded to. It occurred in a goat (*Capra hircus*). We are also familiar with the same thing in man. The same thing may be observed in the ass.

Goubaux (12) has attempted to explain some cases of abnormal growth in rodents, by showing that there often exists in these animals a lateral deviation of the superior maxilla of one side. But his explanations are not very convincing.

This subject cannot be passed over without allusion to the affection of the teeth met with in rabbits whose cranial nerve has been severed in experiments conducted on that nerve by dividing it in the skull. Claude Bernard (28) first drew attention to the subject in his celebrated "Lecons."

(To be continued.)

INAUGURAL ADDRESS.

By J. Smith Turner, M.R.C.S. and L.D.S.Eng.

(*Continued from p.* 248.)

But, gentlemen, numbers alone will not avail us. With numbers we require personal interest and mental activity; we want a sense of responsibility to possess each individual member of this society. However largely our meetings may be attended, they will soon cease to be interesting if the majority be content to sit as lay figures while the same members night after night are left to represent the mental activity of the profession. And yet I cannot help realizing the fact that the existence of this state of things in our midst is being forced upon one, however reluctantly I may receive it.

In proportion to our increase in numbers, the proportion of new speakers and of new writers is very small indeed. Surely improved education has not made such baneful strides amongst us as to quench mental activity and individuality. Surely the elevation of the Dentist and of the Dentist's assistant, and the comparative ease with which a successful dental student can now find a position, is not going to rob our rising generation of practitioners of all sense of moral responsibility to their profession. Is the old truth to be extinguished by the light of a new philosophy of selfishness, and the solemn text, "Where much is given much shall be required," to be travestied into "Where much is given, much more shall be wanted?" Is education to produce a race of ease-lovers—lovers of pleasure and lovers of self? Then, I say, stop education before it work such dire evil; arrest it, I say, before it has worked this evil, otherwise it will assuredly be choked by the rank vegetation of its own production.

I cannot, however, as an advocate of education, believe that such will ever be its permanent results, but I do believe most firmly that, if the advantages and powers which it confers be allowed to run to seed, or be retained for personal or selfish ends, and be not dedicated to the general weal, another and more energetic race of practitioners will arise, who will startle the idle and indifferent from their selfish and short-sighted lethargy, and, occupying the front ranks of our profession, seize as their reward, and as their right, the honours and emoluments which belong to self-sacrifice and energy and public spirit. I would remind our members that the honour of reading a paper before this society is one which is not despised by gentlemen of position in science and medicine. Shall it then be said that we ourselves are the last to appreciate this honour? Or shall it be said that we lack the ability, or the literary industry, or the confidence in ourselves, to provide the necessary matter for our meetings? Surely the possibility of such a disgrace should not be within the bounds of imagination, if we appreciate aright our position and our privileges. And yet I am bound to utter the disagreeable impression I have, that it looks as if the literary activity in our ranks which has made our transactions so valuable is sadly on the wane, and appears in danger of becoming extinct.

I am not blindly bound to read papers as being the only pabulum from which our mental activity should be fed. I consider a meeting devoted to a series of short communications, unfortunately termed casuals, has capabilities for instruction and pleasant interest, even beyond that of one especially devoted to a set paper; but what I do maintain is that when a set paper is wanted it should easily be found within our own ranks. I am fully aware of the value of papers from professional and scientific gentlemen other than Dentists, but what I want is that those papers should be sought for their own value, and as a means of keeping up our intercourse and connection with the scientific and medical world generally, and not because we cannot supply the want from amongst ourselves.

I think that the matter of casual or minor communications requires a little consideration. We must all have noticed that communications of much interest have again and again been slurred over, and that many an interesting discussion has been burked, because a set paper was waiting to be read. To avoid this I think if gentlemen who have communications to make could give our Secretaries an approximate idea of the time likely to be occupied by them, they would greatly assist those gentlemen in arranging the business of the meetings. In like manner, if the readers of set papers would state the length of time they would occupy in delivering them, the reception of minor communications could be regulated accordingly, and so a valuable economy both in time and material might be achieved.

The discussion method is another means of making an interesting evening. It is not, however, within the power of many of us to open a discussion fluently and connectedly, and without a certain amount of repetition, which becomes irksome to the listeners. I prefer, if possible, to be able to pin a man down to what he has said, by having a paper for reference, and it seems to me that if the materials for starting a discussion are at hand, it is an easy matter to put them on paper and so avoid such errors and omissions as belong to all oratorial efforts but those of the most fluent and practised speakers. Still if the inclination of the members tend in this direction, I shall only be too happy to support it to the best of my ability. What I long to see is an amount of intellectual activity amongst us commensurate with the position which we assume as an educated and scientific association of professional gentlemen. It would be unbecoming in me to specify how readily every member might find the means of helping to make the transactions of the society interesting, but I may venture to point out a fallacy which I think is rather prevalent amongst us—that is, the necessity to be original. Originality is, happily I think—for we are far from having used up the materials we possess—a rare gift. It is not originality that keeps the world moving. Originality seldom makes its immediate mark in its own time. Its general reward and appreciation lies in a period subsequent to its existence. What is really wanted for our purpose is an appreciation of the opinions and methods which are in vogue around us, which permeate, as it were, our professional atmosphere, and float about in a hazy, indefinite way, without shape or colour. These must be gathered together and embodied into a tangible form, which can be handled and examined, and which will in its turn become a nucleus which will proliferate and throw off other cell germs to await the harvest of the future observer. Now this nebula of half-formed opinion and half-formed facts which for ever pervades the intellectual atmosphere of the world also pervades the individual intellect, and is one of the sources to which we must mainly look for the materials which will supply our meetings with matters of interest. It is to be found either in the application or modification of ascertained facts, or in gathering together and defining the form which our own opinions and the opinions of others may have assumed under the influence of practical experience and thought. If we all try to do this, giving to the task the necessary time and labour—for such things are not done by inspiration—we will go far to maintain the high standard of our transactions, and in some measure discharge the debt which we owe to those who have worked and toiled for us in times when the resources of science and art were more limited than they are now. The subject of the regulation of our meetings naturally leads us to the regulation or government of our society itself. Formed as this society was at a time when we were only nominally a profession, and by a few gentlemen who had made for themselves a professional reputation and position despite the odour of charlatanism which surrounded the name of Dentist, it was necessarily based on what at that time was considered a restricted and conservative model. But if we look at the matter fairly, we must see that the whole arrangement was characteristic of the founders. The conditions of membership were at once liberal and enlightened, and simply required that any one practising dental surgery should do so in a professional manner. It was left to us to further limit the field of membership, and whether this has been done at the dictates of a narrower spirit than that which animated our founders, or in answer to the higher educational status of our profession, is a question which will perhaps be best answered by the course of events rather than by discussion. But, either way, we cannot but admire the prevision of those gentlemen who could formulate a set of rules requiring so few modifications during a trial which has extended over a quarter of a century. If, however, the society has been more conservative on one hand, it has been more liberal on the other, and recognising the increase of provincial members, has, by a slight alteration in the bye-laws, made it possible to elect a president from the non-resident members; and in the election of office-bearers, the non-resident members can now vote by sending in their balloting papers through the chairman. Other changes have been suggested from time to time, but the influence brought to bear upon the council has either been misdirected or too feeble to call for any special notice or response.

(To be continued.)

DISCUSSION UPON A PAPER ON "NEW MODE OF TREATING DEAD TEETH AND ALVEOLAR ABSCESS."*

By Mr. WALTER WHITEHOUSE, L.D.S., of London.

Mr. MACLEOD said that the only thing absolutely new in Mr. Whitehouse's method of treating alveolar abscess with a blind sac, was the flexible trunk connecting the nozzle with the syringe. This was an improvement in syringes for dental purposes which deserved the thanks of the profession, as by its means it was possible to reach any cavity and insert the nozzle in the nerve canal at any angle, without the intervention of the tube. The therapeutic agents recommended by Mr. Whitehouse were already in use by the profession, and the use of the tube as a means of access to the canals for the purpose of dressing had in several forms been practised, but the combination of the flexible trunk with a nozzle which fitted tightly into the tube used was an advance in the right direction, and would enable the operator to secure an interchange of septic contents of the sac with the antiseptic or therapeutic agent used.

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* Read before the Odonto-Chirurgical Society of Scotland. (See p. 238, last number.)

Mr. **Watson** said, I do not think the syringe sent by Mr. Whitehouse has any advantage over the ordinary hypodermic fitted with fine flexible gold points, curved and straight, which can reach and be used in almost any pulp cavity. I am afraid the flexible india-rubber tubing attached to Mr. Whitehouse's syringe will be speedily acted on and destroyed by some of the medicinal substances used for injection. This method of treating teeth is one which might be useful in the case of country patients, who could not come backwards and forwards for the insertion of dressing, &c. But in ordinary cases I think it preferable to use antiseptic dressings instead of injections, especially in the case of blind abscess, on account of there being less liability for septic matter to be forced through the apex of root or roots, which would make matters very much worse. I was recommended by Professor Chiene to try corrosive sublimate, 1 in 200, for septic conditions of pulpless teeth, and find, so far as I have tried, it is very effectual both for injection and as a dressing. It is one of the most powerful parasiticides known, and is well worth trial as a dental therapeutic agent.

Dr. **Williamson** did not think Mr. Whitehouse's method would supersede the ordinary modes of treatment, although theoretically it seemed to offer some advantages. The insertion of a platinum tube communicating with the pulp cavity had been proposed some time ago by Mr. Ditcham, if he remembered aright, but with the object of applying dressings to the surface of an exposed pulp, and it was an extension of this idea to use it for the purpose of injecting the pulp cavity and root canals. For his own part, in cases where there was no fistulous opening, he cleared out the canals as carefully as possible with the finest nerve extractors, so as to avoid if possible any forcing of matter through the foramen, which would set up irritation in almost every case, whatever the after-treatment might be. Then a rope of cotton wool, soaked in sanitas oil, was lightly packed in the the roots and a temporary filling over it, and if all went well for a month or so, then the root was packed more tightly and a permanent filling inserted. He could not agree with the statement that sanitas was more irritant than carbolic, as he had used the former for more than a year, and the results had been negative of any irritating quality, using the pure oil, whichwas an oxydised oil of turpentine, in a very free manner, as for example, in the case of a lower molar, where there was difficulty of removing nerve fragments from the anterior root, he filled the posterior canal in the usual way with cotton wool dipped in sanitas oil, and then took a pellet of it, also saturated, and placed it loosely in the pulp chamber, thus forming a sort of antiseptic reservoir, draining into the openings of the root canals. To prevent the filling material, generally an amalgam in such cases, from pressing into the cavity, two or three thicknesses of pattern lead were used as a cap over the top, and then the filling inserted. He had employed this method almost entirely in cases where the nerve had been recently destroyed by arsenic, but would employ it in cases of dead teeth, believing that in this way, whatever non-irritant antiseptic was used, the dentinal walls of the root canals were more thoroughly soaked by the excess, and a more permanent aseptic condition produced.

Mr. Rees Price failed to see any very great novelty in the method and apparatus mentioned in the paper of Mr. Whitehouse. He himself for a long time had used a small hypodermic syringe, with very fine flexible gold tubes, and he had found no difficulty in reaching the pulp cavity of any tooth with it. He had first seen such a syringe used by Mr. Claude Rogers at the Dental Hospital of London, some four years since. And with regard to the method of passing a tube from the crown of a tooth to the pulp chamber, filling and treating through the tube, this had also been done by Mr. Claude Rogers some years ago, in one instance in his (Mr. Price's) mouth. The case was that of a six year old left upper molar, with an abscess at the palatal fang, not very amenable to treatment. The two buccal roots were filled and a tube passed from the crown to the palatal root the tooth being then filled with amalgam. A pin fitted the tube to prevent access of food, &c. The tube of the syringe fitted the tube in the tooth accurately, so that any medicament could be forced up and through the root. He had himself treated several cases in this manner, where the condition was chronic or the circumstances such that the patient could not submit to regular treatment. The use of the tooth was obtained currently with treatment.

The Secretary said that he did not approve of the churning process advised by Mr. Whitehouse in his paper, as the syringe itself would, before being again used, require to be treated very carefully and rendered innocuous, if that was possible. It also occurred to him that the plan of treatment so severely censured by one of the members in the last Transactions bore a remarkable resemblance to the one now recommended, although the other was said to be productive of no end of evil, culminating in pyæmia; if the cavity was open, why not treat it in the ordinary manner? What good could result from the insertion of a fixed tube, troublesome to a degree in placement, if it was to command three fangs, which he frankly admitted he could not understand. It was not a process which he would adopt, as the present form of glass syringe with assorted nozzles to suit any cavity was in his opinion infinitely cleanlier and more effectual. The term dead tooth seemed to him to be a misnomer, as if dead, it would be thrown off, and no Dentist would endeavour to retain such in the mouth. Mr. Watson's choice of a name for these cases seemed the more correct one, *i.e.*, pulpless teeth.

Dr. Smith said that certain points in Mr. Whitehouse's paper were of considerable interest in their bearing upon the treatment of diseased pulp cavities. One of these was the allusion to certain cases where the complete removal of the disorganised pulp, although apparently a simple and easy operation according to many descriptions given of it, was in a number of teeth a difficult, uncertain, and sometimes impossible one to perform, at least with the resources at present at our command. Another point deserving of notice was the exact acceptation to be attached in this and in many other dental papers of late, to the term "antiseptics." In the older sense of this word it meant certain substances which exerted a local therapeutic effect in modifying or diminishing or arresting putrescence, or perhaps even the discharge of offensive pus; but in the Listerian interpretation we must recollect that it is in reference to the germ theory that the word is used. Now, it becomes questionable whether in the treatment of any open sore in such a cavity as the mouth, the true Listerian principles can be carried out with effect at all, as each time the dressing is removed or access to the surface of the sore is had by the air, or exhalations, or fluids contained in such cavity, all the previous antiseptic precautions are at once undone. The remedial effect of these substances, however, as local agents, may correct morbid action therapeutically, and in this way prove beneficial; and he had no doubt this was what Mr. Whitehouse and others meant. Mr. Finlayson had spoken of his success by hard packing of the pulp cavity with cotton wool impregnated with such substances, and Dr. Smith considered that pressure in many such cases was a powerful agent in producing these results. By such pressure the remedial agent was kept continuously in apposition with the surface to be treated, while in the other case its action was intermittent to a greater or less extent. In the case of specific ulcers communicating by sinus on various parts of the body—more particularly of a gummatous origin—continuous pressure had frequently diminished discharges and obviated the necessity for laying open such tracks, when combined with antiseptic dressing properly so called. The old method, which was a common practice more than thirty years ago, of inserting a strong thick bristle into the pulp cavity and stopping the tooth round this, and withdrawing it afterwards, was much on the same principle as Mr. Whitehouse's mode of providing an exit for any discharge. He considered Mr. Whitehouse deserved the thanks of the society for his paper.

The PRESIDENT said he did not think there would be much gained by using Mr. Whitehouse's appliance, over the ordinary hypodermic syringe; and in the class of cases referred to in the paper, he would prefer carrying the agent to the end of the canal on silk thread, to either.

He quite agreed with Dr. Smith in his remarks as to the treatment of the putrescent pulp, &c., not being strictly speaking antiseptic.

He proposed that the Secretary be instructed to convey the thanks of the society to Mr. Whitehouse for his paper.

N.B.—Mr. MACLEOD states that he is also at present experimenting with a weak solution of corrosive sublimate (1 in 1000) as an antiseptic, and, so far, with decided success. Further experience against next meeting might enable him to speak more decidedly in its favour or otherwise.

CASES OF INTEREST.

The PRESIDENT exhibited four cases of abnormal dentition in the lower mammalia, and in doing so said that the first, a case of a geminating tooth in one of the *Pteropi*, was the specimen referred to by Mr. Bland Sutton in his very excellent paper on "Comparative Dental Pathology," read before the Odontological Society in January.

The teeth involved in this case were a lateral incisor and a supernumerary or second lateral incisor.

Geminated teeth seemed very rare, only three being mentioned by Mr. Sutton. The others he had to bring under their notice were merely cases in which one or more of the teeth normally suppressed in the genera to which the species belonged, were present.

The first was that of a domestic cat, in which the first (typical) premolar was present on both sides of the upper jaw, the second premolars being rather less rudimentary than usual.

The other two were skulls of the common badger, both showing on the left side of the upper jaw a rudimentary first premolar.

He supposed that many of the cases of supernumerary teeth recorded by Mr. Sutton in his paper, belonged to this class, but unfortunately there was no information as to that point given in it.

Reflections from the Surgery.

ANCHYLOSIS OF TEETH—HÆMOPHILIA.

Cases under the care of Mr. G. Hanreck, of Bethnal Green Road.

ABNORMALITY OF JAWS AND TEETH.—SEVERE HÆMORRHAGE.—RECOVERY.

About six years ago, a patient, aged between forty-five and fifty, came under observation. At this period she had been under treatment in a hospital for tooth-ache, and having been afflicted almost continuously for six months, she presented the appearance of being emaciated from the excess of torment. During the period in which she had been under treatment, several attempts were made to extract the diseased teeth, both of the upper and lower jaw. All such attempts, however, had proved fruitless. The only result which accrued being that the teeth were fractured. Endeavours were then made to stop the teeth. Again failure occurred. The stopping availed the patient nothing. Her agony remained unabated, and she was at length declared to be incurable. She was then recommended by a friend to see Mr. Hanreck. At the period of her visit, a careful examination revealed that, owing to the extraordinary conformation of the teeth, stopping was impossible. A curious feature about the case was, that the patient was utterly unable to localise the pain in any particular tooth. The patient said it was in both upper and lower jaws, but could not say it was worst at any spot.

When next examined, the teeth were found to be very closely placed, so much so as to prevent any instrument being placed between their borders. The whole set appeared as if they formed one tooth. The gums were fearfully inflamed, giving proof of the severity of the pain which the patient must have endured.

The patient urged that a tooth should be extracted in order that her agony might be assuaged. When a tooth was accordingly selected and the instrument applied, it was found that as soon as the tooth began to move the three adjoining teeth also showed signs of giving, as well as a portion of the alveolar border. It was deemed wise under the circumstances to release the tooth. Profuse hæmorrhage immediately ensued, the blood flowing as from a pipe. The bleeding only stopped after great difficulty. The mouth was syringed out, and a cork plate pared to requisite size was placed between the jaws, so that when the jaws were closed, firm pressure was maintained upon the displaced portion of the jaw. A space in front was left to allow of the introduction of food. Lint soaked in tannin was applied to the lacerated gum, and the lower jaw applied to the upper by bandages passed under the chin and over the head. Milk, port wine, eggs, were ordered, and soft food persisted in for two weeks. This patient was seen from time to time and made a rapid recovery. The pain went and the fracture of the alveolar border became united.

In this case it would seem as if by an uncommon abnormality the teeth were deformed and welded into a mass with the jaw. The free hæmorrhage by relieving the congestion appears to have cured the patient.

HÆMOPHILIA.—ALARMING HÆMORRHAGE.—RECOVERY.

Patient was a young man, about twenty-five years of age, strongly built, a cattle-drover by employment; applied for aid about 1879. It appears that he had applied some eighteen months before to a well-known Dentist for extraction of a rotten wisdom tooth, the pain of which gave him great trouble. The Dentist, after vigorous efforts, failed to do more than loosen the tooth in the socket. He then advised palliatives. These measures failed to give relief, and fluxion followed with trismus. In this state he applied for aid. Hot linseed meal poultices were ordered on the outside and figs soaked in milk put over the inflamed gum within.

Any attempt at extraction by means of forceps failed as the jaws were tightly close together. At length, with the assistance of an old-fashioned lever, the tooth was removed. It proved to be very large, and to have four fangs; an uncommon circumstance in the lower jaw. Immediately the tooth was removed a profuse hæmorrhage started, which continued more or less for six days. The greatest difficulty was experienced in stopping the bleeding. Lint soaked in tannin was found of most service, coupled with pressure applied by cork-plates cut wedge-wise with the apex towards the hinge of the jaw.

The head was bound with bandages so that the jaws were kept in opposition.

This patient stated that both his father and brother had similar trouble after undergoing tooth extraction, and they had finally died through it.

The "Missouri Dental Journal."—This useful periodical turns out to have taken a fresh lease of life. It has been repurchased and transferred to St. Louis, its original home, and has been re-issued as vigorous as ever. Its revival is under the auspices of some Mississippi Valley Dentists.

British Journal of Dental Science.

LONDON, APRIL, 1, 1884.

MIDLAND ODONTOLOGICAL SOCIETY.

Subjoined will be found the programme for the first meeting of the above society,—to which, we are authorised to state, are invited, as visitors, all practitioners eligible for membership,—a list of officers and council, and some of the principal bye-laws of the society; by which it will be seen that a most interesting evening may be anticipated for those able to be present, and that there need be no apprehension that, as a society, it is intended to clash with the functions of the British Dental Association.

It will be observed that its very foundation is diametrically opposed to such a result. Being essentially scientific, practical, social, and *non-political*, it can never even run in the same groove with that most useful institution, much less come into direct collision, although it may ably assist in strengthening and carrying out its legitimate undertakings, by all its members becoming members of the Association also (which we sincerely trust they will), when the monthly meetings, by the constant intercourse of the members, will enable them to take broader views of the general requirements of the profession, and also impress those views upon the executive of the British Dental Association for its guidance.

With energetic and judicious management this new society has no doubt a pleasant and useful future before it, and unless we are greatly mistaken, is likely to be the forerunner of many similar gatherings in other large centres. The opposition with which its inauguration was met, and the pluck and determination with which its founders struggled through to so successful an issue, show at once the necessity and advisability of such local societies, and should give courage to any one who contemplates forming them, not to be disheartened because they cannot find *all* of their neighbours of their own mind.

The first ordinary meeting of the members and friends will be held at the Medical Institute, Edmund Street, Birmingham, on Thursday, April 3rd, 1884, at 7 p.m.

Mr. Thomas Howkins, M.R.C.S.Eng., will preside and deliver his presidential address.

Mr. Richard Owen will read a paper on the "Degeneracy of Dental Tissue and the Dietary Influence of Silicated Phosphates."

Exhibition of dental specimens. Casual communications.

OFFICERS AND COUNCIL.

President—Thomas Howkins, M.R.C.S.Eng.

Vice-Presidents—Adams Parker, L.D.S.Eng.; William Barkley, L.D.S.Eng.

Hon. Treasurer—T. Dixon Miller, D.D.S.Balto.

Hon. Secretary—William J. Watson, L.D.S.Ed.

Auditors—Lewis and Attlee, Chartered Accountants.

Council—H. R. Fryer Brookes, L.D.S.I.; S. F. Clarke, L.D.S.I.; T. M. Cottam, L.D.S.I.; F. Dally, L.D.S.I.; R. M. Hatch, L.D.S.I.; Horatio Jones, L.D.S.I.; Harry Owen, L.D.S.I.; Richard Owen; Edwin Roberts, L.D.S.Glas.; J. W. Roberts, L.D.S.Glas.; J. E. Sutton, L.D.S.I.; James Williams, L.D.S.Eng.

PRINCIPAL BYE-LAWS.

I. *Name and Objects*—This society is called "The Midland Odontological Society," and is strictly non-political in its character, being instituted for the elevation of the profession by the promotion and diffusion of scientific and practical knowledge in matters pertaining to dental surgery, the encouragement of social intercourse among the members of the profession and collateral sciences, and the furtherance of the interests of Dentistry as a branch of general surgery and medicine.

II. *Constitution*—The society shall consist of members, corresponding members, honorary members, and associates. —Sect. A. The members shall consist of gentlemen legally entitled to practice dental surgery.—Sect. B. Corresponding members shall consist of distinguished gentlemen, practising as dental surgeons, residing in the Colonies of Great Britain or in Foreign Countries.—Sect. C. Honorary members shall consist of distinguished dental surgeons who have retired from active practice, and of medical practitioners whose names appear in the medical register; and, of gentlemen distinguished in any department of science.—Sect. D. Associates shall consist of dental students, articled pupils, and assistants.

III. Any gentleman desirous of becoming a member of this society must sign and deposit with the secretary the following declaration:—I, , being legally entitled to practice dental surgery, hereby certify that I do not conduct my practice by means of the exhibition of dental specimens, appliances, or apparatus; or by means of public advertisements, circulars, or cards describing professional qualification, public appointments, modes of practice, patented or secret processes, or anything pertaining to fees or professional charges, or in any other way derogatory to the respectability to the dental profession. And I hereby promise that I will, to the utmost of my power, promote the honour and interests of the Midland Odontological Society and observe the enactments of its bye-laws so long as I continue a member thereof.

XIII. *Subscriptions*—The subscriptions shall be, for members, half a guinea per annum; for associates, five shillings. The subscriptions to date from the day of election and from the first of January in each subsequent year, and be payable in advance.

XXXI. *Museum, Library, and Orders of Council*—The council shall, from time to time, take such steps as they may see wise, towards the formation of a museum and library in connection with the society. They shall have power to appoint committees, make and issue such orders as shall appear to them conducive to the welfare and good government of the society, and to the proper management of its concerns. Such orders shall have, for the time being, the force of bye-laws.

XXXIV. *Ordinary Meetings and Place of Meeting*—The ordinary meetings of the society shall be held on the first Thursday in January, March, April, May, October, November, and December in each year, at 7 p.m. precisely, in the rooms of the society, at the Medical Institute, Edmund Street, Birmingham, in the County of Warwick.

XXXV. *Visitors*—Each member or associate may introduce two visitors at these meetings, but the same visitor shall not be admitted more than *twice* in one year. All visitors must sign the visitors' book kept by the secretary.

XL. *Dissolution of the Society*—In the event of a dissolution of the society, the then existing library, museum, and all other property, shall be handed over to some public institution to be decided on at a meeting convened for that purpose.

LIGHT AND AIR.—An action is pending in which Mr. J. S. Turner seeks redress for interference with his professional work arising from his light being cut off by the construction of a building in the rear of his professional residence. This trial is one of much interest to Dentists at large, as to no other class of persons is an uninterrupted light of such tantamount importance. It is a great hardship that professional men who have, as a rule, a sufficiently heavy load of professional cares and worries should be compelled to enter the judicial lists as litigants especially in cases such as this one, in which the Dentist really is contesting the cause in the best interests of the public.

ABUSE OF MEDICAL CHARITIES.—We have heard much of late concerning the abuses of hospital out-patient consulting rooms by well-to-do patients: ladies who come in silks and satins. It would appear that one section of the public are equally willing to defraud their Dentists. The authorities of the "Ladies Dental Institution" at South Kensington, instituted originally to fulfil the needs of necessitous gentlewomen, have been obliged to issue the following notice: "Notice.—Alteration of Hours.—Wednesdays from ten till six, and from nine till seven on Mondays and Fridays, for the convenience of country patients, employés, and others requiring artificial teeth. N.B.—This institution was originally intended for the benefit of ladies of limited means only, but has since been extended to servants and others requiring artificial teeth, &c. It having come to the knowledge of the institution that its objects have been much abused by ladies of position participating in its benefits, it is now, therefore, earnestly requested that none other than those for whom this institution is intended will in future attempt to avail themselves of its advantages, there being three other days in the week set apart for the convenience of such patients.—For further particulars apply to Hon. Sec., Major G. Hollond, as above."

ODONTALGIA REFERRED TO THE EXTREMITIES.—Dr. Lovejoy, in the course of a discussion of the American convention, referred to a curious case of this nature. The patient, a young lady, had been under medical treatment for some time on account of neuralgia, referred at times to one of the toes, and at times to her arm or shoulder. Dr. Lovejoy, upon examining her mouth, found a wisdom tooth missing. Enquiry divulged that it had never come through the gum. Upon trial, it was found that this wisdom tooth was impacted against the neighbouring molar. When this state of things was remedied, the neuralgic pains went.

Resection of the Dental Pulp.—Dr. A. A. Blount, in "Independent Practitioner," writes: "The tooth was a second bicuspid; cavity on the posterior approximal surface, a small opening the size of a pin's head into the pulp chamber. The doctor excavated thoroughly, not however touching any portion of the dentine covering the pulp, which stood up in the centre like a little mound. With a sharp, thin-bladed instrument, prepared by himself for these operations, with one stroke he removed that portion of the dentime, together with the portion of the pulp covered by it. After allowing the blood vessels to empty themselves pretty thoroughly, he applied chloride of sodium for a few moments to draw out the remaining blood, and to contract the vessels, washed well with tepid water, dried the cavity thoroughly, and filled immediately with oxy-chloride of zinc, mixed to the consistency of putty. There was but little pain during or after the operation. The doctor does this almost daily. In every case presented to him, in which he may reasonably expect the pulp to die under a gold filling, he prefers resection, knowing that he leaves a healthy wound, and the probability of a rapid cicatrization."

Artificial Crowns.—Dr. Buckingham writes upon this subject: "Every effort to preserve the natural roots should be welcomed and encouraged, because by this means we are enabled to give patients useful masticating organs from what would otherwise be condemned to the forceps. Where the roots are decayed down, a platinum tube split at the lower end may be used, the split end being spread to tighten the hold of the tube by filling with amalgam. The strongest teeth for crown-work are ordinary plain plate-teeth. You can cover the whole back with gold plate and make it very strong, and the backing may be made to lap around the edges, so as to represent a filling on both sides of the tooth. By this means all the strain comes against the backing instead of the tooth. Fit a thin piece of platinum wire in the pulp-canal and a piece of plate to the end of the root, then solder pin and plate together; fit the tooth and take out and solder to the platinum plate, and you will have a tooth that will fit perfectly. To set the crown permanently, put in some phosphate of zinc—it is not correct to say oxyphosphate—and adjust pin and tooth to their proper position. It is sometimes difficult to get a tooth of the proper colour. In such case select one as near as you can get it, paint it over with mineral paint, put into a crucible, heat to a point that would melt silver, when the paint will be burned in. This can be done with an ordinary blowpipe and charcoal. It is, however, better done with a crucible, and better still in a furnace."

The "North Wales Chronicle," bearing date Feb. 23rd, gives an account of an action heard at the Bangor Petty Sessions before Mr. Charles Pearce, and other magistrates, in which a Dentist's assistants sought to recover wages which they stated were due to them. We can simply state the facts as they are placed before us and the general public; we cannot, however, refrain from expressing regret that such cases should ever get into court. Without prejudicing the issue, it appears to us that more forbearance might have been shown on both sides, and a grave scandal have been averted.

Messrs. F. G. Allen and Kempster sought to recover the arrears of wages due to them from Mr. J. A. Wilson, Dentist, in whose employ they had been. Mr. S. R. Dew appeared on behalf of the defendant and argued that the summons served upon his client was bad, inasmuch as it had not been served four clear days before the hearing in Court The summonses had actually been served the previous day. He applied that the summonses should be struck out and new ones issued in proper form. Mr. Kempster explained that a postponement of the hearing of the case would be a serious inconvenience to him, inasmuch as he was obliged to look out for another situation. He had answered an advertisement in one of the professional journals, and in the course of a correspondence with Mr. Wilson had agreed to come at a salary of 25s. a week. After he had been with the defendant about a week he said he would give him 15s. a week. He had a wife and child to keep, and he declined to accept such a sum. Mr. Dew contended that it would be no hardship to the plaintiff to wait till new summonses were issued, inasmuch as his wife had money. Mr. Kempster replied that under the Married Women's Property Act a wife's money was her own. Mr. Dew said that Mr. Allen had permanent employment in the city. The Bench decided that new summonses must be issued, and they advised the plaintiffs to take the advice of some solicitor in order that they might put themselves in proper form.

THE "DENTISTS' REGISTER," 1884.—Upon examining the newly-issued volume of the "Dentists' Register," we find it contains the names of 5296 dental practitioners in place of 5252 which appeared in 1883, thus giving an increase of forty-four. Dental licentiates are increased: in 1884 there are 801 as against 759 last year. There are four D.M.D.'s of Harvard, and one D.D.S. of Michigan; the only foreign qualifications. Twenty-two registered practitioners possess surgical qualifications, although these do not represent nearly all those who practice Dentistry upon surgical diplomas.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

CARBOLINE.

We have been sent some samples of Messrs. Pearson's "Carboline." It is useful both as a preparation for the teeth and as a mouth-wash to remove fetor, &c. It is stated to owe its origin to a desire to meet the increasing demands for germicide teeth washes. The preparation before us possesses a pleasing colour, an agreeable odour and taste, and appears to answer its purpose excellently. In use it is certainly both pleasant and cleanly, recommending itself both to the eye and the nose. We have not subjected it to the test of the *experimentum crucis,* viz., its actual power of destroying micro-organisms; but no doubt this could easily be accomplished. We can from personal experience highly commend Messrs. Pearson's Duncan's Carboline.

NEW FORM OF VULCANITE TEETH.

Mr. Josiah Ritchie has submitted to our notice several sets of vulcanite teeth of exceedingly natural appearance, being of excellent shapes, colours, and sizes, having somewhat the semi-transparency of the American teeth, and the material appears of good strength. Instead of platina pins for imbedding into the vulcanite, they have a transverse dovetail groove for the rubber to flow into. For suitable cases, especially entire sets, they are apparently well adapted, and from their natural form of enamel with necks, instead of abnormally elongated enamels, and their necks being broad enough to prevent the rubber being seen between them, are calculated to be very useful teeth.

A USEFUL STICKING WAX.

Dr. Butler describes in the "Ohio State Dental Journal," a preparation of sticking wax; the formula is a modification of one given by Dr. Wheeler, of Albany: Gum damar, 7 ounces; bleached wax, 4 ounces; canada balsam, 1 drachm. While operating, if one happen to knock a hole in the rubber dam, raise it up and stick a piece of paper over the hole with the wax. Where it is impracticable to apply a clamp, push the dam well up against the gum, dry the tooth, warm and apply a small piece of the wax against the tooth and dam. The warmth of the tooth will keep it sufficiently flexible to permit of adjustment. This wax will be found useful, also, in adjusting gold and porcelain crowns, attaching single teeth to trial plates, etc., especially in warm weather.

Abstracts of Foreign Journals.

DEUTSCHE MONATSSCHRIFT FÜR ZAHNHEILKUNDE.

"DENTAL COMMANDMENTS." (From the Vienna Press.)

1. Thou shalt not eat hot foods, nor drink cold drinks.
2. Thou shalt not walk through the streets with open mouth in winter, neither shalt thou crack nuts with thy teeth.
3. Thou shalt not forget to rinse thy mouth after eating, nor to brush thy teeth with a tooth-brush.
4. Thou shalt not neglect to have hollow teeth immediately stopped.
5. Thou shalt not forget that hollow teeth which give you pain must be extracted.
6. Thou shalt not go about with vacant spaces in thy mouth, but have lacking teeth supplied by artificial ones.
7. Thou shalt not forget that spaces between the teeth hurt the sound teeth, and are prejudicial to the health.
8. Thou shouldst only go to the twenty years' famed Dentist, Dr. Kerzl Wien, Rothen thuren Strasse 35.
9. Thou shouldst notice particularly the number 35 and the name Kerzl.
10. Thou shouldst continually keep these commandments.

"WEIGHTS IN THE POCKET."

Very few people have discovered that they carry about in their pockets perfect weights, so that if one requires to weigh anything at a time when proper weights are not at hand, he has only to put his hand in his pocket and conjure up the wished-for weights. These weights are our money, gold, silver, and copper, they are quite perfect and certain, provided they have not decreased in weight through long use. One pfennig piece weighs two grs., three two pfennig pieces ten grs., two five pfennig pieces five grs., one ten pfennig piece four grs., two twenty pfennig pieces ten grs., nine five pfennig pieces twentyfive grs., nine one mark pieces fifty grs., nine two mark pieces one hundred grs., nine five mark pieces (silver), two hundred and fifty grs., one five mark piece (gold) two grains, one ten mark piece four grs., one twenty mark piece eight grs.

Our English coinage offers a similar set of weights; thus the sovereign weighs 123·27447 grs.; the half-sovereign, 61·63723 grs.; the shilling, 87·27272 grs.; the sixpence, 43·63636 grs.; the threepenny bit, 21·81818 grs.; the farthing, 43,7500 grs.

INDEPENDENT PRACTITIONER (*March*).

"Woman" (An oration delivered before the American Academy of Dental Science, Boston), by Dr. Kingsley, New York.

Dr. Kingsley considers the place woman occupies, and then makes the pertinent remark that if woman must wait to be sought, she must live in the mean time. To realise how, occupies the succeeding papers of the oration. He reviews the opening which may or may not exist in the field of Dentistry for women. In the manipulative department, woman's inexactness, and lack of inventive power, would exclude her; but she finds a place more suited to her powers, we are told, in acting as secretary, making appointments, arranging times, managing juvenile and refractory patients, talking over hysterical or timid ladies, &c., &c.; in fact, acting as common sense right-hand-man. The fear of admitting into the confidence an assistant who will turn round and divide the Dentist's *clientèle*, is obviated by employing a "lady help."

The papers, which follow and treat of dental caries, under the unparliamentary title of "Over the Garden Wall," and of "Indoform in Surgery," we must defer until our next issue.

THE ARCHIVES OF DENTISTRY.

This is the successor of the "Missouri Dental Journal."

"Materials and Manipulation," by Edgar Park, D.D.S. (Read before the St. Louis Dental Society.)

The material used for stopping deciduous teeth must, of course, vary with the means of the patients. Dr. Park thinks that although amalgam is a most seductive material to employ it is far inferior to gold, and so should not be used for well-to-do people who can afford to pay for the more expensive material. The teeth should be saved first, but more remains to be done; the appearance and comfort, &c., must be seen to. Amalgam grows discoloured. Much depends upon the care with which the cavity is prepared. Hill's stopping and kindred preparations contain a good deal of gutta percha. The only argument against the use of the material is its destructibility—in some of its most important uses this objection amounts to nothing—as in filling root canals. It will last ten or twelve years in favourable situations. The facility with which it can be removed commends it as a temporary stopping. Carelessness, it is urged, is the most frequent cause of failure.

Oxy-chlorides do not commend themselves to Dr. Park. They are useful in some cases, valueless in others, and the cases cannot be recognized in which their use is to be recommended. Dental Porcelain equally fails its purpose in the hands of our author. Gold stopping is vaunted as being the best. Hill's stopping is useful as an insulator where the pulp is closely encroached upon by decay; and as used against the walls of cavities where the condition indicates the necessity for protection against the force, necessary in the use of cohesive gold. When gold fails, Dr. Park believes its failure is the fault of the manipulator. A common cause of failure is that so much force is brought to bear upon the walls of the cavity, by the use of cohesive gold, that much mechanical injury results. Non-cohesive gold should then be employed in rough anfractuous cavities. Non-cohesive gold-stopping saves the manipulator's time, and prevents the patient's fatigue.

"CHILDREN'S TEETH," by John G. Harper, D.D.S.

This paper is a sequel to a former one which treated of temporary teeth, the subject of the present one is "Permanent Teeth."

The commonest cause of loss of teeth is neglect, the neglect is the result of dread of suffering pain if the toothache is complained of. The children who are brought to the Dentist's consulting rooms must be freed from this dread as far as possible. To this end Dr. Harper never used forceps for children, save as a last resource, but trusts to an elevator, which he avers frightens them less. He also avoids using the formidable dental chair, and strives to amuse his little patients. Among the causes of defective teeth is undue development of the brain and nervous system. Early schooling and want of exercise tells injuriously upon the teeth. The first permanent teeth are the most important, and should be most carefully preserved. If beyond redemption, extract at once to prevent the second molar tipping forwards. Dead teeth last many years in the mouths of children. A case is cited in which a central incisor had its pulp destroyed when the owner was but thirteen, and at forty this tooth was perfectly preserved. The first molars have the main part to do with mastication. The ten years following the eruption of these teeth are usually a period of supineness, if not of neglect. Advice forced upon parents may obviate this, and so redeem the teeth from an early fate. Stopping children's permanent teeth should be done with gold. If this be impracticable, a temporary filling may be employed until the child is old enough to allow the gold filling to be inserted.

THE NEW ENGLAND JOURNAL OF DENTISTRY. (*March*).

"The Bacteria," by Charles S. Boynton, M.D.

Bacteria have been known to exist for years; until the "germ theory" was promulgated, their significance was overlooked. The bacteria are vegetable, "cells deprived of chlorophyll, of globular, oblong or cylindrical shape, sometimes sinuous or twisted, reproducing themselves by transverse fission; living isolated or in cellular families." They also reproduce their like by spores. In 1868, Pasteur, working at this subject, showed their causal relation to fermentation, while Devaine and Hallier proved their specific characters as regards Charbon. Cohn, in the middle of this century, studied these micro-organisms, and classified them according to their form and life history. In shape they vary from oval or cylinder to a thread-like form. In matter of size, they vary within very wide limits. Prof. Burril's figures are quoted, "In transverse diameter, one twenty-five thousandth of an inch is a very common measurement." The rest of the paper discusses the relation which these minute organisms bear to the fungi and other lower vegetable forms.

(*To be continued.*)

THE DENTAL PRACTITIONER.

"Changes in the Gum," by W. R. Hall.

The great importance of examining the gum is insisted upon, as malposition and deformity of this will prevent an accurate adjustment of teeth. Badly fitting sets of teeth will cause this condition. They will press upon certain points, indenting the gums during the pressure exerting in mastication. If the impression be taken at this time the new plate would fit more evenly, but the depressed parts of the gums recovering their elasticity would, after a time, cause the plate to fit loosely. The author recommends the following means of avoiding this.

Firstly, the old plate is to be disused several times a day to allow the gums to recover themselves. If the patient will not do this, an impression of the gum is to be taken in plaster. A cast from this will show the indentations perfectly. They are to be filled to the margin with plaster. The old set are then to be fitted to the cast, the plate being filed when pressing too hard, and all gaps filled with gutta-percha. The old set may then be worn for ten or twelve days, and a fresh cast taken and a new plate made. If the old set be of gold or silver it is more difficult to be removed, and the gaps should be filled with celluloid. The writer urges the great importance of thorough and careful examination of the gums before any operation is undertaken, and further believes that it will save time in the end if the model be carefully studied before any opinion is given to the patient or any work begun upon the new plate or whatever it may be.

Literary Notices and Selections.

MERCURIAL POISONING—A CASE OF FORTY YEARS' SUFFERING, BUT FINAL CURE.

By W. F. Johnson, East Corinth, Maine.

Mrs. M., a lady fifty-two years of age, applied to the writer in March, 1881, concerning the condition of her mouth, giving the following history:—

At the age of thirteen, when sick with fever, she was treated with calomel. Seventeen years after this treatment the second superior bicuspid and first molar on the right side, together with the alveolar process attached, exfoliated and came away in a body. Soon after the corresponding teeth of the inferior jaw and the two central incisors, together with the alveolar process, exfoliated and came away. After this there was a continuous offensive discharge from the antrum and surrounding parts, until she came under my treatment at the above date, she having received no treatment for the disease of the maxilla up to that time.

She had always been in poor health since her sickness of fever referred to, about forty years before she came under my treatment. Her ill-health she attributed solely to the diseased condition of her mouth.

The process of the superior maxilla was eaten away from the canine to the second molar, and extending to nearly the centre of the hard palate, making an opening into the antrum and nasal cavities nearly an inch in diameter.

A large portion of the floor of the orbit was destroyed, exposing the eye and causing intense pain in the eye whenever the patient went into cold air, also causing contraction of the inferior rectus muscle, the movements of which could be distinctly seen by the aid of a mirror.

Her remaining teeth being in bad condition I removed them, seventeen in all, after which I commenced treatment of the disease of the maxilla by applying aromatic sulphuric acid, about one-half officinal strength, direct to the part affected, three times a week for two weeks. I then used dilute chloride of zinc twice a week for three weeks in the same manner. In the meantime I directed her to thoroughly cleanse the part three times daily with tepid water, to which about fifteen per cent. of phenol sodique had been added. This she did by taking it into her mouth and throwing it out through the nose. The discharge at this time having ceased, I discontinued all treatment except the use of dilute phenol sodique after the above manner, which she continued for about two months. At the end of that time the parts were in a healthy condition. I then inserted a full set of teeth, after the usual manner, on rubber, which she wears constantly. All trouble in the eye ceased, the plate effectually shutting out all cold air.

The treatment in this case was entirely local, no constitutional treatment whatever being employed.

I saw the lady a few days since, and had the pleasure of finding her enjoying excellent health; and, although nearly three years have passed, there has been no return of the discharge, and the parts are, to all appearances, in a healthy condition.—*Items of Interest.*

Dental News.

DENTAL STUDENTS' ASSOCIATION OF GLASGOW.

The usual Monthly Meeting of the Dental Students' Association (Anderson's College), Glasgow, was held in the dental hospital on Wednesday, the 19th inst.—James Cumming, Esq., L.D.S., Bath Street, President, in the chair.

The minutes of the previous meeting having been read and adopted, the Chairman then proceeded to show several pieces of continuous gum facings, which he had been recently experimenting upon in order to arrive at the best means of minimizing shrinkage.

Mr. James Cameron, L.D.S., Main Street, Gorbals, showed a very ingenious apparatus that he has designed for the better working of celluloid. The idea was pronounced to be a very excellent one; and from the specimens shown it was the unanimous voice of the meeting that celluloid covered in his apparatus had attained such a state of perfection hitherto unknown. The colour was really beautiful, and its texture and density was all that could be desired. The machine is simple in construction, and is easily wrought, and the failures hitherto existing have all vanished by this new mode of working.

After a vote of thanks to Mr. Cumming and Mr. Cameron the meeting was brought to a close, after having spent an instructive and enjoyable evening.

THE ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

The Fourth Ordinary Meeting of Session 1883-84 was held on Feb. 14th, in the Rooms, 30, Chambers Street. Andrew Wilson, Esq., L.D.S., President, in the chair.

The minutes of previous meeting having been read, were approved.

The following gentlemen were nominated for membership: John Thomas Browne Mason, L.D.S.Eng., Exeter; Ernest F. Cox, L.D.S.Edin., Jersey; Felix Henri Weiss, L.D.S. Eng., London.

The following gentleman was balloted for and admitted a member, Squire W. Allen, Jun., D.D.S., 65, Queen Street, Edinburgh.

ROYAL COLLEGE OF SURGEONS.

List of successful candidates: Appleby, Herbert, Stroud, Gloucestershire; Ayers, A. W. P., Stratford Place; Baldwin, H., Moore Street; Buckland, S. C., Wimbledon Park; Fox, A. M., Teddington; Mundell, Stephen, Leeds; Pedley, R. D., M.R.C.S., Borough. Two candidates were referred.

VACANCY.

Dental Hospital of London, Leicester Square.—The post of medical tutor to the above institution is vacant. Salary, £40 per annum. Candidates to send in their applications on or before Monday, April 21st. Particulars may be obtained on application to the Dean, Mr. Morton Smale.

THE ANNUAL DINNER OF THE LICENTIATES OF DENTAL SURGERY AND MEMBERS OF THE ODONTO-CHIRURGICAL SOCIÉTY.

THIS Dinner was held on the evening of March 13th. in the Balmoral Hotel, Edinburgh—WILLIAM HERBERT WILLIAMSON, M.D., L.S.D.Edin., &c., Aberdeen, occupied the chair, and the duties of croupier were performed by Mr. John Moore Lipscomb, L.D.S.Eng. There was a good attendance. After an excellently-served dinner.

The CHAIRMAN proposed the usual loyal and patriotic toasts, which were duly honoured.

Dr. LITTLEJOHN, in giving "The Licentiates in Dental Surgery," said he took it as a great compliment to be called upon to propose the first toast after those which were generally called the statutory toasts of the evening. He recognised this toast as a most important one. Nothing had more interest to a sister profession like his own—that of surgery—than to see gentlemen asserting their position, and, by submitting themselves to a proper examination, obtaining a proper diploma, and thereby soliciting an honourable position and securing the confidence of the public. (Applause.) He had great pleasure in proposing this toast. He had the honour of belonging to the Board of Examiners for Dental Licences, and he could truly say that the college which he had the honour to be connected with had most carefully and judicially discharged its functions in the way of admitting gentlemen to the profession of Dentistry. (Applause.) He was there to tell them that the gentlemen who came forward were submitted to a very careful and searching examination, and unless a man came up to the standard which the college had assumed to be the standard they at once gave them the go-bye. He was there also to state this gratifying fact that those who came up *sine curriculo* had again and again passed satisfactorily. They had managed to acquit themselves in such a manner as to obtain the applause of the examiners. In the case of others who had gone through the curriculum he had frequently had occasion to mention that if such gentlemen had appeared to obtain the ordinary licence of the college—they were men who had so conscientiously studied anatomy, physiology, and chemistry—he was perfectly certain that they would have carried that licence with honours. There were gentlemen who apparently seized the opportunity of crossing the Channel and passing in Ireland in enormous numbers as compared with the number who came up at the rival colleges of Edinburgh and London. It was not for him to give an explanation of that on the present occasion; but the Royal

College of Surgeons of Edinburgh, feeling the responsibility of its position, had risen to that position, and had instructed its examiners on no occasion to pass any man to the register but those who were thoroughly capable not only of passing the examination, but of undertaking the practice of this honourable profession, so that whatever other corporations might do the hands of the Edinburgh Corporation were clean. (Applause.) They could look every one in the face and say they submitted the candidates to a rigorous examination and admitted those who passed a satisfactory examination. He had great pleasure in proposing this toast and of associating it with the name of Mr. Stirling, Licentiate of Dental Surgery of the English College. (Applause.)

Mr. JOHN STIRLING, in acknowledging the toast, said it was to their interest to see as many licentiates on the register as possible, because, in raising the status of their profession, they were raising themselves, and their responsibility became greater. It was all very well to say the next generation would reach the position they were striving to gain; but surely something might be done in the present day in that direction. It was surprising to observe the apathy which existed among some regarding the degree of L.D.S., and to hear it said that it was too easily obtained in some places and too difficult to gain in others. He thought if a greater number tried to get the degree it would give them some excuse for what they said. The man who tried and failed was a better man than the man who never tried at all. (Applause). The benefit he derived from the preparation and study he had gone through made him feel that he had at least gained something. Referring to the Medical Acts' Amendment Bill, which had been introduced in the House of Lords, he said it would have no effect on the dental profession; he had hoped that it would have given more equality of examination, as it would have been desirable to have had one examination for the three countries. He was sure they were all thankful to the medical profession for having at all times shown so great an interest in their cause, and such a desire to help it forward. (Applause.)

Dr. DAVID WILSON, in proposing the "Odonto-Chirugical Society," said it did not require any eloquence on his part to recommend the toast to the company. He was very much struck, on looking over the many important subjects which had been brought under the consideration of the society during the few years it had been in existence. It had now got into its "teens," and he hoped that when it had attained its majority it would have a very good tale to tell of its achievements. He spoke of the prominence which had been given by the society to the study of the use of anæsthetics and other important subjects, and said that the necessity for prosecuting these branches was a proof that the standard imposed on them was not too high. (Applause.) He had great pleasure in proposing "Prosperity to the Odonto-Chirurgical Society."

Mr. ANDREW WILSON, President of the Society, replied. He said that, having recently gone over the record of the society, it was needless to recapitulate it further than to say that during the past session they had at least kept up the reputation it had gained as a scientific society. Frequent communication seemed to be absolutely essential if they wanted to keep up a healthy life in the members or in the body politic, and that was one of the main objects of the Odonto-Chirurgical Society. As regarded the advantages of scientific societies he would leave that to the gentleman who came after him, who represented the great dental scientific society of this country. (Applause.)

Mr. J. S. AMOORE asked them to drink to the toast of "The Odontological and Sister Societies." The present conditions of these societies must be highly satisfactory to their founders, and he thought there could be no doubt that if the present system of dental education advanced by the same rapid strides that it was now taking that their value would be appreciated to a far higher degree by the great body of Dentists and thus their prosperity would become still more prosperous. He coupled the toast with the name of a gentleman who had come from a great distance, and to whom it was both pleasure and profit to listen, and who had done so much for his profession in every way—Mr. James Smith Turner. (Applause.)

Mr. SMITH TURNER, President of the Odontological Society, in acknowledging the toast, expressed the pleasure he had in coming to his native city as the representative of the Odontological Society of Great Britain. That society had been of great advantage and use to the profession generally, and his own countrymen, with their usual shrewdness, had been able to appreciate its good work. Scotsmen were generally very ready to pick up something very good and appropriate it. They had seen the necessity and virtue of general education, and they had appropriated the school board. So it was with the Odonto-Chirurgical. It had been founded on principles similar to those of the Odontological, and they had established a society which had been able to gather together the dental practitioners, and had obtained the support of the medical profession also. (Applause.) With regard to the society he represented, it had recognized the necessity for education; but it had done more than that—it had recognized the necessity for special education—for an education such as Dentists required—an education which, if left out, would be fatal to the profession of a Dentist. He thought it was well they should always remember that the licentiate of dental surgery was in every respect equal to the membership of any of their medical corporations. They should remember that the time they took to go through their curriculum was the same—that the expense was the same, probably greater—and that the preliminary examination was the same; and he thought it was too true that, while the dental student gave up as much time, as much money, and perhaps more work to the study of his profession, and for the acquirement of a dental qualification, he saw nothing in the future to come up to anything like the return which the medical student saw over his lifetime. The dental student deserved well of the medical profession and the public generally on this particular ground, that he studied entirely for the dental profession. The medical student saw before him a long vista—a number of vistas, he ought to say—in any of which he might achieve success. He saw before him the army, the navy, sanitary, poor law, lunacy and parochial appointments. All these things things were opened up to him as soon as he acquired his diploma. The Dentist had nothing of the kinds. The dental diploma became an extremely rare and valuable one, the Odontological Society was the first to establish that curriculum, and the medical council have not seen occasion to interfere with it. They had recognised their profession as a specialty, and, as a matter of course, they had recognised the necessity for a special education. There was no student who passed through the College of Surgeons of London or Edinburgh taking the surgical degree who had not a very fair general knowledge of the science of optics, or who did not know how to treat general cases of the eye, and a very fair knowledge of the diseases of the ear and throat, and who had not also a very fair knowledge of skin diseases and midwifery. All these things had been made into special subjects by a certain number of men, and that with considerable advantage to the public and to the profession too, because those men who practised the profession generally could not be so well up as one who gave his whole time to it. But in the ordinary curriculum they had a fair average knowledge of all these subjects. He spoke from the book. But dentistry was purely and entirely a specialist study, and they could go to no ordinary school in this country to be taught it. Very few medical students knew anything about it. Some of them might be able to extract teeth, but that was a very small part of

Dentistry. They had to go to special hospitals for the study of Dentistry. That was the position they were placed in now —first by themselves and then by the medical profession. (Applause.)

He had wandered a long way from the Odontological Society, but that society did represent the scientific aspect of the profession, and, seeing they had such a large number of educated men daily entering their ranks, he thought the importance of such a society as this daily increased according to the education which they received. Not only did these societies keep them in countenance, but they helped them to appear without that awful stigma of meanness, and, he might say, blackguardism of their profession. (Laughter.) They helped to keep them in favour and to maintain the identity of their profession before the provincial world. They gave the public what they pretended to give them, and they spared no pains in acquiring that knowledge and ability. The Odontological Society was a flourishing society, he was happy to say. Last year they had a very energetic president, and under his care they had a considerable addition to their members, although, also, they had taken steps to limit the number of constituents by making it necessary that every member must have a recognized dental or medical diploma. (Applause.) As dental students took their L.D.S. they had helped to support such societies as this in order to get their profession put before the eyes of the public. He did not think so much of that as of keeping it before the eyes of the professional world as a scientific profession. (Applause.) He thanked them for the way the toast had been given and received.

The Chairman then proposed "The Licensing Bodies." The toast was a very important one, as it was from these bodies that they obtained their passes and parchments. It depended very much upon the way in which these parchments were obtained that they esteemed the body that gave them; and he need not travel very far in order to find a college that gave the diploma which was very highly esteemed. Dr. Littlejohn had somewhat forestalled his remarks by his statement as to the Edinburgh College, of which the gentleman whose name he was to couple with this toast held the honourable position of president. (Applause.) Dr. Smith had taken the initiative very much in the matter of dental reform and dental education. It was greatly owing to his exertions that the College of Surgeons was one of the first to come into the field and give a dental diploma to the profession. (Applause.) They, in Scotland especially, owed very much to him for his exertions in the way of dental reform—(applause)—and that had been recognized by the British Dental Association, who had elected him president for the session. He asked them cordially to drink to "The Licensing Boards and Dr. Smith."

The toast was enthusiastically honoured.

Dr. SMITH, in acknowledging the toast, expressed the high sense of the honour he felt in having his name connected with it, more especially on behalf of those licensing bodies which conferred the diploma of L.D.S.—(applause)—and it was no self-gratulation in him to say that he felt, in responding to this toast, the honourable position in which he stood to one of these licensing bodies, namely, the Royal College of Surgeons of Edinburgh. (Applause.) He spoke of the one with which he was more immediately connected, but at the same time, in returning his acknowledgments for them, he would couple with it and include all the other licensing bodies which, as he had said, conferred the diploma of L.D.S. He thought it no affectation in him to say, when he spoke of the Royal College of Surgeons, that in its legislative and its representative capacity, as well as in its connection with the teaching and licensing of students, it had done, if not more, at least as much as any licensing body in the United Kingdom. (Applause.) In speaking thus, he might refer to the abuse which the college had suffered at the hands of some of the inferior order of medical journals in London. That abuse was as unfounded and unfair as it possibly could be. It had been generally based upon the second-hand evidence of second-rate authorities, and, he could say, on his own observation, that that abuse had sunk to the very lees and dregs of factious opposition. He was glad to say that the Colleges here of Physicians and Surgeons and the Faculty of Glasgow were now likely to place themselves in a position where their vigour and strength would be more felt than ever it had been before. (Applause.) He did not deny that there might have been on the part of these and all licensing bodies room for improvement. He did not deny that legislation regarding examination in medicine and surgery might be improved. He did not say they were perfect. At the same time he did not think that it should be at the expense of the Scottish corporations so that other medical bodies might occupy a position of isolated splendour and look down upon them. (Applause.) With regard to the dental diploma, all that fell from Mr. Turner was perfectly right, and he was sorry that dental students made such a sacrifice. They deserved every praise for what they did. He did not think they needed to make all that sacrifice, however, as a very few more classes would qualify them as full surgeons in case of need. He would only state that what had fallen from his friend in another respect—that medical men, and among them he supposed he was including examiners for dental diplomas, knew nothing whatever of dental surgery, or nothing about the teeth, unless they studied dental surgery specially, was rather a sweeping assertion. The medical schools did teach dental surgery to a certain extent. He was sure that some of the books on surgery in the hands of the students had a very large portion of them devoted to dental surgery. He did not say that the ordinary surgeon could stop teeth or construct artificial teeth. He thought if Mr. Turner only considered what was required in the way of extra study by those who were specialists in other branches of the profession he was sure he would find very little difference between the amount of time required to make the one or the other proficient. At the same time he thought dental students deserved a great deal of credit. He often thought it unfortunate that the dental student spent so much time, money and trouble with the prospect, perhaps, as he had often said, of settling in Tongue, or Kildrummy, or some out-of-the way district of Scotland, where there was no chance of remunerating himself for the immense expense he had incurred. He considered that Dentists deserved a great deal of praise for such self-sacrifice. (Applause.)

The CROUPIER proposed "The Edinburgh Dental Hospital and School." He said there was one thing he was sorry to see, and that was the small pecuniary interest which the general body of the profession in Scotland took in this institution. They were all anxious, or ought to be, that this branch of the medical profession should be an ornament to it, and that its members should be grounded in all the branches—not only that they should be good extractors of teeth, but thoroughly conversant with surgical operations and the treatment of diseases of the head and neck. He hoped the day was not far distant when the dental surgeon would be called into consultation more frequently than at present in reference to these diseases. (Applause.) He thought there was no doubt about it, as they had heard from other gentlemen, that the medical profession was taking a greater interest in their branch than hitherto. He was very pleased to hear that the Edinburgh Dental Hospital and School was sending out a good staff of dental surgeons. They had a Dean whom he was sure they in Scotland and in Great Britain ought to be proud of. He had done a great deal of hard work as Secretary and Dean of the hospital. (Applause.) He was always willing to assist and encourage students in their work, and he was sure that so long as they had him as Dean he would still continue to encourage the students and get them thoroughly qualified for the position they were intended to hold. There was one thing he wanted, and that was willing hands to help him. Those who lived in the country were not able to do much, but they could give him their pecuniary and moral support. (Applause.)

Mr. W. B. Macleod, Dean of the Hospital, in acknowledging the toast, endorsed every word that Mr. Lipscomb had said in regard to the important nature of the dental hospital and school, and as to the status and ability of the dental staff. He was especially grateful to the worthy Croupier for the prominent position which he had given to the necessity of moral and pecuniary support from their provincial brethren. There was not the slightest doubt that since the institution of the hospital they had received little pecuniary support. They had plenty of morality in Edinburgh —(laughter)—and if their provincial brethren insisted upon sending them their moral support he hoped they would not send it plain, but gilt—it was pecuniary support they wanted most. The moral support would come after. (Laughter.) He had no doubt that the institution would continue to flourish and prosper as a place where dental instruction was to be obtained.

Mr. J. A. Biggs gave "Visitors from a Distance," which was acknowledged by Mr. Peter Crombie.

Mr. Finlayson asked a toast for "The American Schools of Dentistry," and referred to the indebtedness of Dentistry in this country to that of America. Many ideas they worked upon were American. He coupled the toast with the name of Mr. Squire Allen, who replied.

Mr. Walter Campbell proposed a toast to "Absent Friends," and, after Dr. Littlejohn had proposed "The Croupier," the proceedings terminated.

APPOINTMENT.

Mr. I. Lee Pike, L.D.S.Eng., has been appointed Dental Surgeon to the Children's Hospital, Sheffield.

Teething.—Teething often gives trouble, and then it is well to see to the gums and lance them when a tooth is protruding and the point is hot and tense. *Cut the point, or points only*; don't *draw a lancet across the whole gum,* and so leave a cicatrix to divert the teeth, that are yet to come, from the straight line. When there is much irritation produced by the teething, you may prescribe:—Pot. brom., grains five; aq. anethi, drachm one. If there be any heat of head and constipation, add tinc. sennae M. xx. until the bowels are opened.—*Leonard's Medical Journal.*

Notices of Societies.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY GENERAL MEETING, HELD MARCH 10TH, 1884,

C. TRUMAN, Esq., M.A., M.R.C.S., &c., President, in the Chair.

THE minutes of the previous meeting were read and confirmed.

The following gentlemen were proposed as members: Mr. Lenhartson by Mr. Norris, seconded by Mr. Crocker; Mr. Wrighton by Mr. Campion, seconded by Mr. England.

Casual communications were brought forward by Mr, Latchmore, who showed two plaster models, each containing a supernumerary tooth. Mr. Barstow showed a second upper molar tooth, with a supernumerary tooth attached to its lingual surface.

Mr. ARTHUR UNDERWOOD presented the society with a very interesting specimen of an incisor tooth covered with large masses of calco-spherites.

The new laws of the society were further discussed, as time would not allow it to be finished. The PRESIDENT proposed that a special meeting be held in May, and the discussion be then continued, which was agreed to.

The PRESIDENT next called on Mr. Paterson to re-open the adjourned discussion on Mr. Pedley's paper, entitled, "Diseases of the Pulp."

The subject was handled in a very masterly way, Messrs. Marcus Davis and Campion also taking part. At the close Mr. Pedley made an excellent reply.

Mr. HERN, in proposing a vote of thanks to Mr. Pedley, expressed regret that the discussion could not have lasted longer. Mr. PATERSON seconded the vote of thanks, which was most cordially agreed to.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor of the "British Journal of Dental Science."

SIR,—In answer to query of "L.D.S.Eng." (in your Journal of March 1st) respecting "a preventive of nausea when taking impressions," I beg to offer my experience in such cases. First use a solution of starch (100 gr. to the oz.

water), with which well brush over the palate, as far as the isthmus faulium.

This must be repeated a few times at short intervals. Then the mouth should be well rinsed with warm water, after which, the palate should be brushed several times with a solution of bromide of potassium (25 grs. to the oz. water). A short interval should ensue between each application.

In very slight cases of nausea, once brushing with the latter solution will be found sufficient. The use of the starch solution is necessary in any case, which by its emollient action relaxes the tissues, and ensures the better and quicker action of the bromide of potassium.

I have found this method never fail, and am sure that "L.D.S.Eng." will find all he desires in the above.

I am, Sir, &c., A LONDONER.

To Correspondents.

Post-office Orders to be made payable at the Langham Place Hotel Office, to G. E. Skliros, 82, Mortimer Street, Regent Street, W. A single number sent on receipt of seven (penny) stamps.

ANSWERS TO CORRESPONDENTS.

"Utility" is requested to send name and address as unsigned communications cannot be taken any notice of.

Communications have been received from Messrs. Elliott, W. T., Egbaston (Birmingham), Edw. Pearson (Nottingham), Dental Manufacturing Co. (London), F. A. Huet (Manchester), J. L. Pike (Sheffield), Wm. Carruthers (Glasgow), John S. Amoore (Edinburgh).

BOOKS AND PAPERS RECEIVED.

"Vulcanite and Celluloid" (Gilbert), "Notes on Dental Practice" (Quinby), "Dental Medicine" (Gorgas), "Injuries and Diseases of the Jaws, 3rd Edit." (Heath), "Repertorio Dental," "Monatsschrift des Vereins deutscher Zahnkunstler," "Pharmaceutical Journal," "Dental Cosmos," "Lancet," "British Medical Journal," "Recherches sur les Gencives et leurs Maladies" (Magitot), "Des indications Therapeutiques dans la Carie Dentaire" (Magitot), "Dental News," "Ohio State Journal," "Chemist and Druggist," "Temperament in relation to the Teeth" (Dr. White), "El Progreso Dental de la Habana," "Items of Interest," "Independent Practitioner," "Le Progrès Dentaire," "Midland Odontological Society Byelaws," "Archives of Dentistry," "Atlantic Journal of Dentistry," "New England Journal of Dentistry," "Deutsche Monatsschrift für Zahnheilkunde," "L'Odontologia," "L'Art Dentaire," "Glasgow Medical Journal."

NOTICE.—We desire that it may be clearly understood that our pages are open to all for free expression of their views on matters connected with our profession. We only ask for terseness of expression and MODERATION IN TONE.

When otherwise unobjectionable, difference of political or other opinion will never be regarded by the Editor as a disqualification for the admission of any communication to the pages of the BRITISH JOURNAL OF DENTAL SCIENCE.

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THE HÆMORRHAGIC DIATHESIS, ESPECIALLY IN RELATION TO DENTAL OPERATIONS.

By Dudley W. Buxton, M.D., B.S., M.R.C.P.

Among the accidents with which an operating Dentist is most frequently brought into contact, uncontrollable hæmorrhage causes, perhaps, the greatest anxiety.

There are many cases which, for the moment, tax alike the presence of mind and the manipulative skill and pluck of the operator, but once met, in most instances, the emergency is happily overpassed, and the dental surgen congratulates himself that all is over and dismisses his patient with a feeling of perfect tranquillity as to the future. In dealing with excessive hæmorrhages, all this is changed, there is a dread that we are dealing with a condition altogether out of the common, we recognise that Nature herself is at fault, and so our efforts, unless happily they succeed in arousing her aid, must prove fruitless.

In view of the seriousness of the situation in which operators habitually find themselves when called upon to deal with "bleeders," we propose to offer a review of the present knowledge of the subject.

To no class of practitioners does the subject of hæmophilia come more home than to Dentists. As a rule, no previous history of a patient is either asked for or volunteered, so that it may fall to the lot of any Dentist to be confronted with the terrible result—death from hæmorrhage—after the most trivial operation, such as incising the gums, dividing the frænum linguæ, treating a ranula, or extracting a carious tooth.

Hæmophilia is by far the most important member of the group of diseases classed under the heading of hæmorrhagic diathesis.

It would seem not improbable, however, that as our knowledge of the pathology of hæmophilia becomes more exact, that it will be found that there really exist several conditions more or less closely allied which are at present grouped as a single disease.

For our present purpose it will be sufficient to trace the course commonly run in hæmophilia, and to enquire how far a diagnosis may be arrived at before operative measures are undertaken, and the patient put to grave peril.

Hæmophilia has been mainly studied in Germany, and it would seem that this is the reason that the disease appears to occur more commonly there than elsewhere. It is probable that many cases have been, and indeed are, overlooked for want of exact knowledge of the disease, and so the records as at present received of the geographical distribution of hæmophilia must be accepted with extreme caution.

Hæmophilia is a congenital condition characterised by the tendency to spontaneous hæmorrhage from mucous surfaces; by capillary oozing ensuing upon the most trivial wound or scratches, an oozing which is stanched with the most extreme difficulty, or even defies all endeavours to arrest it. This disease is further characterized by a tendency to swelling of certain joints, and evinces certain peculiarities with regard to its transmission by hereditary descent.

It will be convenient to consider the symptoms in the first place in order that we may not fail to recognise the gravity of such cases should they unfortunately be presented for operation, and that we may be prepared to lose no time in adopting such treatment as experience has ratified as being the most efficacious.

Until actual hæmorrhage occurs there is but little to direct attention to the condition of the bleeder. It has been stated that the subjects of this complaint are usually fair, with light eyes, thin, transparent skins, with bright intelligent countenances. They are frequently apt at learning, quick and sanguine indisposition. Clearly such signs are valueless, as no Dentist would deem himself justified in refusing to extract a tooth on account of his patient possessing the whole group of traits here mentioned. But such peculiarities, coupled as they frequently are with visible blue veins, should place the Dentist upon his guard and lead him to put questions which will elicit important facts in the patient's history. Bleeders are congenitally prone to bleed; they usually evince symptoms before the tenth year, generally much earlier. Epistaxis is the commonest form of hæmorrhage which occurs, and it usually occurs early in life. Nose bleeding is a common ailment of childhood, but is one which should receive careful attention and provoke thorough enquiry as to ancestry, &c.

Bleeding from the funis is uncommon, although cases are recorded in which the infant has been sacrificed by uncontrollable hæmorrhage after severing the umbilical cord.

Vaccination seems also to be well borne, so that the mere fact, that no severe bleeding followed from it or at birth, does not preclude the possibility of a child being a bleeder.

Next to the mucous membrane of the nose, that covering the mouth and pharynx, is the most prone to bleed. Both at the first and second dentitions the gums are liable to spontaneous hæmorrhages. As a rule, these hæmorrhages seem to be a sort of soaking out of blood, but some cases are on record, in which the bleeding has been very profuse.

None of the mucous surfaces, however, enjoy immunity from tendency to bleed. Hæmorrhage from the intestinal canal is common, leading to copious bloody stools. Although less likely to end fatally, hæmaturia is by no means rare.

The skin is less liable to spontaneous hæmorrhage, but uncontrollable bleeding may ensue upon scratches, leech-bites, or even after blistering. Hæmatidrosis, or bloody sweating, appears in a certain percentage of cases. Subcutaneous hæmorrhages, however, are very common. These occur, either as extensive bruises—quite out of proportion to the severity of the injury—or as ecchymoses.

In other forms, again, we find simply petechiæ—and, indeed, in the milder forms of hæmophilia, such as occur among women, the presence of petechiæ may be the only sign pointing to the existence of the disease in question.

The joint troubles usually are, firstly, swelling with effusion, and, secondly, severe pains, mostly put down as "rheumatic." In many instances, so severe are the effusions, affecting generally the larger joints, that the sufferer becomes completely invalided.

Some observers have sought to establish the presence of prodromal symptoms. It would seem, however, that such prodromata are at the best indefinite, and are mostly the symptoms of plethora or malaise, which although they may form a useful guide to the physician who is watching a case, the diagnosis of which is already determined, cannot, we think, prove in the least degree serviceable as a means for arriving at the nature of the patient's diathesis, should no history of family predisposition to bleeding exist.

With reference to the onset of the hæmorrage after injury, it may be said that it is often insidious, it may not occur for some hours after the infliction of the injury, or may be so slight as to excite no alarm. But ere long the patient finds himself slowly but surely parting with his life's blood, and it is then that seeking means to check the hæmorrhage he finds the difficulty of his task. In some of the fatal cases immense quantities of blood were lost immediately after the infliction of the injuries, the patient only ceasing to bleed with the supervention of syncope, and with the recovery of conscious ness the hæmorrhage reappeared, to be stanched only by death. Fortunately such catastrophies are not the rule. Indeed we must recognise various degrees of hæmophilism.

Wickham Legge classifies under three varieties—(1) the typical, or severe form in which spontaneous hæmorrhages, joint swelling, &c., occur, and which occurs more commonly among men, and (2) in which, although spontaneous hæmorrhages occur from mucous membranes, there is little or no liability to extreme bleeding after injury. This form of hæmophilia is, perhaps, the one which occurs most commonly among women, and (3) the variety in which subcutaneous hæmorrhages occur, and in the case of women this form is characterized by early and profuse menstruation.

We have next to pass on to consider the inciting causes and most approved modes of treatment. In the case of Dentists it will be of more interest to consider in detail both the usual forms of bleeding from the mouth, spontaneous, and as the result of traumatism, and the best plans of dealing with these cases.

(To be continued.)

A NEW METHOD OF TREATING ARTIFICIAL PLATES IN CASES OF UNUSUAL TENDERNESS OF THE GUMS OF THE LOWER JAW.

By Percy May, M.R.C.S., L.D.S.Edin.

The extreme tenderness of the gums of the lower jaw experienced by some people is well known to most practitioners, and the trouble it causes is a source of great annoyance, both to the Dentist and patient, on account of the frequent alterations required to relieve the pressure of lower plates in edentulous jaws, more especially in the case of elderly people, and after recent extraction.

The remedy is, of course, to line the hard base of gold or vulcanite with some soft material, such as vela, or Freeman's rubber, either of which will answer in by far the majority of cases. There are some, however, which will not bear the pressure even of these and the case I now describe is an instance. The patient is about seventy years old and in excellent health, and there is nothing about the gums to contraindicate bearing the ordinary amount of pressure.

I tried all the substances generally used in such cases, but for many months entirely failed to give him satisfactory relief, and he was constantly with me, complaining always of pain and inconvenience, and at length grew so dissatisfied that he consulted several other Dentists (all competent men), but without obtaining any prolonged amelioration of the painful symptoms. On his return to me I proposed trying a soft base, composed of the red rubber, similar to that used for the mouth pieces of infants' feeding bottles, and have found a thin layer of it, baked to an ordinary vulcanite lower, answer admirable for eighteen months, doubly so as the mouth is unusually flat. There is considerable suction power with it, thereby obviating the use of springs.

The disadvantage of this soft preparation is, that it soon becomes pulpy and perished, and requires renewing every six or twelve months, although keeping it in rectified spirit and water at night slightly obviates this, but I have never detected the least offensiveness arising from it.

Other materials, such as Para gum, becomes more injuriously affected in a shorter time.

DEGENERACY OF DENTAL TISSUE AND THE DIETARY INFLUENCE OF SILICATED PHOSPHATES.*

By Richard Owen, Esq., Wolverhampton.

Mr. President and Gentlemen,—Few of us will question the appropriateness of the subject I have chosen, for this, the inaugural meeting of a highly important organization, such it is, at any rate, our intention to make it, for the diffusion of knowledge, not only for the benefit of ourselves individually, but for our junior members—who are destined to take up the work where we leave it; and so maintain and perpetuate our present knowledge, and advance according to the ever developing sciences of the day.

Seeing that degeneration of dental tissue has been the cause of bringing us together as a profession, and rendering such a society as "The Midland Odontological" a necessity, I can conceive no subject more appropriate for our consideration than this.

It is not my intention to travel over the well-beaten track of scientists, but shall give my own thoughts on the subject of degeneracy, for it is my opinion that we must have more practical observations detailed rather than allow oneself to commit the common error of writing an elaborate *exposé* of pathological conditions relating to some organic disturbance; and allow me, Sir, to express a hope that every member of this society will endeavour to bring before us the practical facts of every day life, that we can all benefit and apply the information we obtain in our day of labour.

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* Read before the Midland Odontological Meeting, Birmingham, April 3rd, 1884.

Degeneracy.—This leads me to consider that nearly forty years ago, as a medical pupil, I well remember the tug of war with the old key. At that time we had not so much to fear the crushing of the tissue, as the pull—the long pull—a question of strength and determination to have the tooth out—a day when parsimonious folk had work for their money—plenty of lugging about the surgery. You know, to-day, we are apt to think that our patients would sometimes like more lugging about for the fee *they have to pay.*

Degeneracy we must all admit, those practitioners of my age, at any rate, has been silently doing its work, but very surely; we do occasionally see the good old type of structure—the Anglo-Saxon type as I always say—but at what age is it? Why in mouths of over forty summers; rarely do we see anything like decent structure in youth and early manhood, and in children worse still. I have often to lament the suffering of the children, who have only a few months developed an indication of their age. Alas! the development—what is it? A soft, pearly, bluish, chalky thing, we are compelled to call tooth structure; which invariably can be pierced with an excavator in a few months.

Now, Mr. President and Gentlemen, for the sake of the suffering little ones, let us carefully examine the cause of this deterioration, and see if we cannot spare the nervous system, from the debilitating influences of one of the most painful maladies inflicting the human family; and the most serious detriment to health and comfort in after life.

The germ of the deciduous tooth being embryonic in origin, we are bound to consider embryonic conditions; and this leads me to pass in view the state of high civilization in which we have our being; and take for our consideration the fact, that though attended with very high privileges—surrounded with luxuries at a moderate cost, such as our forefathers, even with riches, could not attain to; yet, we are bound to acknowledge, that this state of existence is the chief precursor of degenerate dental tissue. Let us comprehend the fact that, the nearer we approach to the primeval man in habits, so the human family have the more perfect normal dentition, and what does this arise from?

This question, undoubtedly, opens up a wide area of thought, and I shall have to trace it to mode of life in the primitive man; and in civilized man, to being creatures of conventionalism, as the sequel of civilization. By this term, let me be understood to mean that conventional life which compels every body to live, as it were, to please his neighbour—to vie with each other in the ornamental part of life; and this means waste and wear of physical life and health; and what keen competition and worry in the battle of life is to the man, harassing domestic duties, coupled with insufficient out-door recreative exercise, is to the woman, a very important factor in causing degeneracy of dental tissue.

Every one can readily believe that the more perfect physical man can be developed under the auspices of savage life, with plain seed and flesh food, and the canopy of heaven for their covering—pure air to breathe, and their habitation pitched, that they rarely require furniture vans; and another very important item, they have no bills of exchange to meet. These creatures cannot help but develop, and retain their physical life, and accordingly, their dental tissue.

Some fifteen years ago, I was consulted by a gentleman of about twenty-two years of age, who was on the point of starting for America to enjoy a life in the woods on account of his failing health. I found caries of the upper incisors, fully one third in extent, and several other teeth sharing the same fate.

The case looked one of difficulty, in the event of a mechanical break down, and expecting his return in twelve months or so, with improved health, I advised him to go with his frail structure.

In four years he returned, looking an entirely changed man, with grand physique; and although he had suffered from two attacks of fever, during his absence, yet, to my astonishment, the caries of his dental tissue had been arrested in its course, and his structure was, in every respect, better than when he started; he had not suffered at all, and now simply wished to consult his vanity, and have an improved appearance. This is a case of improvement under favourable conditions; not only healthy employment, such as shooting his flesh food, and eating plain bread, but having a free and easy life, his assimilative power increased—as I fancy it would do with most of us under such conditions; and, being also free from the worry of conventional life, his whole man was renewed in physical tone—hence his dental tissue. This case came under my notice again last year, and, happily for him, he had retained his physical tone.

Hereditary and physical disability to become progenitors, cannot be practically considered; or, looking at the question from that point of view, we should say, that nature should not be allowed to prosecute her powers of development at all, in a large number of cases; it is appalling and lamentable to see the suffering produced by physically imprudent marriages.

Degeneracy of dental tissue, in civilized life, has for its origin depreciation of physical tone: arising largely from the non-observance of hygienic and physiological laws.

(*To be continued.*)

AMPUTATION OF THE ROOT OF A MOLAR.

By John G. Harper, D.D.S., St. Louis, U.S.A.

DEMONSTRATOR OF OPERATIVE DENTISTRY IN MISSOURI DENTAL COLLEGE.

Last November, a young lady called to have her teeth attended to, I found the superior left first molar badly decayed on anterior and buccal surfaces at the neck of the tooth.

After removing all the decay, the anterior buccal root was almost severed from the tooth, exposing soft tissues at the bifurcation, I covered the bottom of the cavity with gutta-percha and put in a cement filling on trial.

There was a thickening over the buccal roots, which was caused no doubt by exostosis.

To-day, March 18th, the lady called, and I found a fistulous opening at a point midway between the apices of the buccal roots.

Distinctly remembering the conditions of the tooth, I determined to remove the anterior buccal root, which was easily accomplished.

The portion of the root removed was just three lines in length, and was largely exostosed around the apex. I made smooth the filling and tooth, dismissed the patient, hoping to have no further trouble, but requested her to return in one week for examination.

Dr. Edgar Park amputated the palatine root of a molar for a lady patient, the root could not be restored to a healthy condition, hence this step was taken, with happy result. To him I am indebted for the suggestion.

These are the only cases I have seen.

IRREGULARITY OF THE TEETH, AND THE MODERN METHOD OF CORRECTING THEM.*

By Dr. J. S. Crapper, L.D.S., Hanley.

Mr. President and Gentlemen,—I desire to demonstrate the advisability in the majority of crowded mouths of extracting the six year old molars, especially those of the upper jaw where the arch is small or narrow, although I do not advocate interference with nature by extracting these teeth in every case. When the six year old molars decay at any early period it is expedient or absolutely necessary to remove them. Yet in a crowded arch where the teeth are of a strong texture and little or quite unaffected by the ravages of caries it may in most cases be more judicious to regulate them, and so effect a cure, in shorter time, by the removal of one of the bicuspids on either side, this depending on the peculiarity of each case. But in all cases where the six year old molars are decayed, it is better to extract them in preference to interfering with the bicuspids. The models marked Nos. 1 and 2 show a case in point.

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* Read before the Midland Odontological Society, Birmingham, April 3rd, 1884.

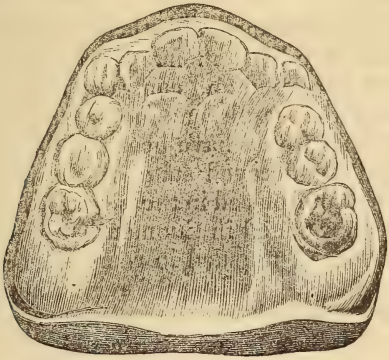

FIG. I.

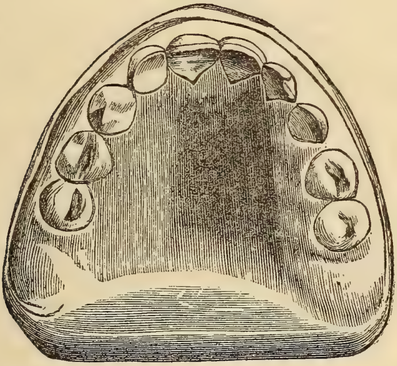

FIG. II.

In No. 1 you will observe that the arch of the jaw is considerably contracted. You will also notice the permanent canines obtruding on the labial surface of the gum, had they been allowed to remain without attention for a few months longer, they would have developed and produced what we too often find, the ugly appearance of two tusks standing out in bold relief, because the spaces where these two permanent canines should erupt (in order to secure a natural expression and ultimately preserve two such valuable teeth) are completely closed, possibly in consequence of the two temporary canines having been prematurely removed, a cause we too often meet with in cases of this kind, to my mind nothing is more reprehensible than the too early extraction of the temporary canines; I consider that they should never be removed, unless under exceptional circumstances. The patient a young lady, twelve years of age, was brought to me with instructions from her father, that the two upper canine teeth, to which I have drawn your attention, were to be removed.

If I had acted in accordance with these instructions, I consider that it would have been an irreparable loss for a young lady at her age. A narrowed and contracted arch would have most probably been the result, and the naturally pleasant expression of her features would have been completely destroyed.

You will see by the decayed state of the molars, (which have been extracted and placed in the model No. 1,) that they could not have been retained in the mouth very long. So that the course of treatment I pursued in removing the six year old molars, and subsequently making the regulation plate (which you will observe attached to the model No. 3) was in accordance with the views I have expressed.

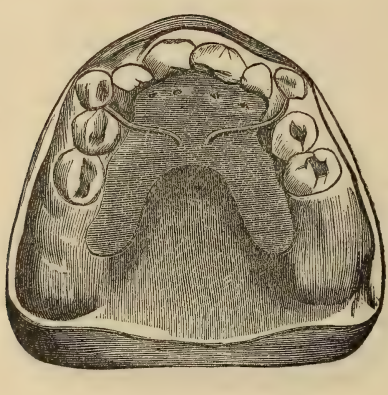

FIG. III.—

Vulcanite plates carrying gold attachments to produce pressure upon the anterior surfaces of the first bicuspids on either side (these gold bands can be bent up to the teeth as they are moved backward) with small holes drilled in the vulcanite so that pegs can be inserted in order to push the front teeth from the lingual surfaces outwards, thereby making use of the plate in divergent directions of pressure at one and the same time. By this treatment the arch of the jaw has been considerably increased, and no doubt the second molar teeth will occupy the position that the six-year old molars formerly did, and thus the proper symmetry of the mouth will be secured, which will be a lasting blessing to the patient. You may no doubt, have met with cases in which, owing either to neglect or to not having been properly treated, an unenviable expression of the features has supervened, particularly noticeable in those of the opposite sex, which is much to be deplored. When a lady smiles we like to see her teeth smile also.

The Dentist ought to be able to say, "find me mouths and the teeth shall speak for themselves," as these models speak for what has been done for my young patient I think you will confirm my opinion that the treatment pursued must inevitably be a lasting blessing to her, making her countenance more pleasingly expressive, and giving to the features a charm, which otherwise would have been absent.

The young lady is at present at a boarding school in London. When I next see her, I shall hope to find the second molars coming nicely *in situ*, the full advantages however will only be obvious in a few years' hence, when the wisdom teeth, coming through, will have sufficient room to fall into the proper arch.

It may be also observed that, by having expanded the arch and giving proper breathing room for the front teeth, if they should (owing to the teeth not being of strong texture) be attacked by decay, an increased facility will be given for their treatment, and the promotion of a healthier state amongst the remaining teeth. The mode of treatment, which I have just submitted to you may be the means of generally preventing the serious and distressing symptoms which frequently accompany the development of the wisdom teeth in overcrowded arches, and promoting a much less chance of caries in after life.

The misery resulting from incomplete assimilation, the many distressing symptoms attendant on imperfect digestion and the complicated diseases of the digestive organs, often arise from, or at least are aggravated by, the loss, or diseased conditions of the teeth, and many pains exist both local and remote, which sympathetically arise from their unhealthy condition, to relieve which it is more than useless to apply local remedies so long as the seat of the evil remains undetected.

Cases of a distressing kind often come before us, in reference to irregularities which have been allowed to pass without attention, most frequently through parents omitting to seek or take advice in time.

Referring to irregularity occurring during eruptive stage of the permanent teeth. How often we find cases where advice has not been sought in time that the patient has had to endure the torment of toothache, and consequently been put to a great amount of unnecessary pain and trouble in after life, although this is sometimes owing to a hurried or incorrect diagnosis of cases requiring the utmost skill and attention. The practitioner should be thoroughly conversant with the periods of change of the various teeth, and the order of their eruption so that he may be able by timely and judicious assistance to adopt the proper course to prevent the results which we often meet with in those who have not had the advantages of proper attention at the proper lime.

In conclusion, I hope the case which I have brought before you may be of some service in elucidating the opinions of others; and any questions you may wish to ask I shall be glad to answer.

I have endeavoured to place before you some ascertained facts, by submitting to your notice and inspection, models of other mouths where irregularities have existed, besides the one to which I have specially called your attention; some of the cases represented by models are at present under treatment, and if it is compatible to your wishes that I should read you another paper to explain the result of my efforts at some future time, I shall be most happy to do so.

And let us hope that this, the first meeting of the Midland Odontological Society, may have numerous and successful recurrences in the future, and let us remember that for any class of men to succeed in fully developing the art by which they live, there must be established a system of continuous periodical meetings for the intercommunication of ideas amongst each other, they must exhibit the elements of unity, good fellowship, a desire to impart, and a willingness to receive such ideas, they must be encircled in one fraternal bond of sympathy. And my most earnest wishes are that the Birmingham Odontological Society may become as useful, in its day and generation, as the London Odontological Society has been now for over a quarter of a century, although, to start with, that noble institution had to encounter opposition to its infantile life; therefore be not discouraged, but, go on, go on! go on!! go on!!!

ADDRESS DELIVERED AT THE MIDLAND ODONTOLOGICAL SOCIETY, April 3rd, 1884.

By Thomas Howkins, M.R.C.S., President.

The occasion of our meeting here this evening must, I feel sure, be a source of congratulation to us all, alike to those of us who are engaged in the practice of dental surgery, as well as to those of our friends who are engaged in practice as physicians and surgeons, and who, by their welcome presence among us this evening, or by their letters, desire to manifest their good will towards us. as well as to testify to the interest they take in the establishment of our new society. Of course it is a matter of common notoriety that during the last few years great and important legislative changes have taken place which materially affect the position and status of the practitioners of dental surgery. Under the provisions of what is known as the Dentists' Act, we have been recognised by the State, certain privileges have been accorded to us, and, in return for those privileges, certain obligations will be imposed upon all those who, in future, desire to enter the dental profession—obligations which will ultimately, no doubt, have the good effect of very materially raising the status of Dentists in the estimation of the public at large. The old joke that there were three grand resources for broken-down people—to turn schoolmaster, Dentist, or agent for Guinesses' stout, whatever particle of truth it might have contained in years gone by—will certainly not apply to the future. The establishment of a somewhat lengthy and exacting curriculum, to be followed by an examination which must give complete satisfaction to those authorized to conduct it, is a sufficient guarantee to the public of the qualifications and attainments of those who, in future, will be permitted to operate upon the dental organs of her Majesty's lieges. It is now some thirty years ago since the establishment of the Odontological Society in London. Under the heading of "objects and constitution of the Society," its first byelaw states that "it is instituted for the encouragement and diffusion of knowledge in dental surgery, and for the promotion of intercourse among the members of the dental profession." The late Mr. Samuel Cartwright, in an address delivered at the first meeting of that society, so well expressed the condition of the dental profession in London at that time, a large portion of which, after nearly thirty years, is still so applicable to its state in the Midland Counties, that I need make no apology for now quoting from it. Speaking, in 1857, of the increased number of those practising dental surgery, he says, "But while with a large class of practitioners, the educational acquirements are all that can be desired, it cannot but be felt that in another, and a large class, too, the standard of education is calculated to form merely a successful artisan; and, consequently, there are two classes of practitioners—the one practising Dentistry as a profession, the other carrying it on as a trade or business. It cannot be doubted that a liberal education is of the greatest advantage to those engaged in practice, and the more education is extended in all ranks of society, the more it becomes necessary that the members of our profession should qualify themselves as highly as they can, for those who employ the services of a Dentist in these days have a right to look, and do look, to the qualifications of the mind, as well as to the mechanical adroitness of the fingers."

"Dental surgery is in itself a well-defined speciality. No one, I think, who has undertaken its cares and responsibilities can fail to feel that it is strictly a branch of the surgical profession. It was then from a conviction of this kind, long and generally entertained among many distinguished members of the profession, and from a feeling that the time had arrived when it is very important that some steps should be taken calculated to secure to our body, so mixed and so made up of discordant elements, a higher and a recognised position, which, while it raised the tone of our department of practice would at the same time check the influx of many persons into our ranks whose connection even nominally with our profession is a subject of regret to all respectable practitioners, that a memorial to the College of Surgeons was prepared in December, 1855, and submitted to a certain number of our profession for their signatures, in order that it might be laid before the council of the college for consideration on the occasion of their next meeting." Happily, the council of the College of Surgeons ultimately acceded to their request and established an examination entitling those who passed it to a licentiateship in dental surgery. This examination, however, was entirely optional on the part of those who submitted themselves to it and remained so until the passing of the Dentists' Act, when this examination or a similar one instituted by the colleges of Edinburgh and Dublin, became compulsory on those who wished to enter the dental profession. A further quotation which I shall venture to make has an especial bearing upon our proceedings of to-day. "The members of the dental profession have hitherto kept aloof from one another, and retained in exclusiveness the modes and peculiarities of private practice. The want of a point of union among its members, where subjects interesting to the whole body of educated practitioners might be introduced and fairly discussed for the mutual benefit of all, has long been felt. The necessity of such an union, generally acknowledged but never carried out, has given rise to the formation of the Odontological Society. Founded on the basis of other scientific societies it, like them, originated with one or two, and has been organised by several. These formed themselves into a society, and out of their number appointed officers and a council for the first year." I think this very accurately describes the motives which animated, as well as the various steps which have been taken by those to whom the formation of the Midland Odontological

Society is chiefly due. They, too, like the founders of the Odontological Society of Great Britain, felt the want of opportunities for the discussion of matters both scientific and practical, as well as opportunities for cultivating that social intercourse among themselves which has hitherto been wanting, and to supply these, among other deficiencies, it is that the Midland Odontological Society has been called into existence. Although a new society, and this the first meeting at which we are assisting, it has not been founded in opposition to, or to supplant any existing society. It has been established to supply the wants which I have already mentioned, and I am sure we all trust that it may have a long and uninterrupted career of prosperity and usefulness. (Applause.) It has, moreover, been established on those broad and well known lines which have given permanency and stability to many societies of a kindred nature. It has, indeed, taken as its great exemplar the Odontological Society of Great Britain; its bye-laws are as stringent as those of that body, and are well-nigh identical with them. And now, gentlemen, this society having been established, its success or failure rests with ourselves. Societies such as this do not perish from outward agencies, but from indolence, apathy, and want of energy within. (Hear.) Let each member, then, be prepared to take his part, either by contributing some papers of interest, or by taking part in the discussion which may follow, by the exhibition of interesting cases or rare specimens, or in some one or other of the many ways which may interest or instruct those who assemble at our ordinary meetings. Before I conclude this brief address permit me to advert to a matter personal to myself, and that is to acknowledge and most warmly thank the members of this society for the compliment they have paid me in electing me to the very honourable position of their first president, (applause), an honour the greater because I must honestly confess that the burden and heat of the day in the formation of this society has been borne by others and not by me. Nevertheless, gentlemen, I shall endeavour in return for the honour you have conferred upon me to do my best to forward, in every way that seems to me good, the prosperity and usefulness of this New Midland Odontological Society.

NEURALGIA.—Patients are often much annoyed by neuralgia after roots of dead teeth have been stopped or treated. This may often be relieved or arrested by—Tincture aconite, drops five; tincture gelseminum, drops ten; aqua, ounces four. Sig.: A Teaspoonful every hour.

COMPARATIVE DENTAL PATHOLOGY.

By John Bland Sutton,

LECTURER ON COMPARATIVE ANATOMY, &C., MIDDLESEX HOSPITAL MEDICAL COLLEGE, LONDON.

(*Continued from p.* 304.)

I am not aware of its mention in English text-books, but Flint (14) gives an account of it:

"In dividing the fifth cranial nerve it is impossible to avoid the small motor root; consequently the muscles of mastication become paralysed by the operation."

"In rabbits the paralysis of the muscles of mastication on one side, and the consequent action of the muscles upon the unaffected side only, produce in a few days after the operation a remarkable change in the appearance of the incisor teeth. As the teeth in these animals are continually worn away in mastication, and reproduced, the lower jaw being deviated by the action of the muscles of the sound side, the upper incisor of one side and the lower incisor of the other touch each other but slightly, and the teeth are worn unevenly. This makes the line of contact between the four incisors when the jaws are closed oblique instead of horizontal."

Atrophy.—I have met with a curious instance of atrophy of the teeth in a reptile—a python. On opening the mouth of the snake after death, I was surprised to find that on passing my finger over the buccal mucous membrane no teeth could be felt, the mucous lining of the mouth was so thick that the ridges usually found between the two sets of teeth were obliterated. On dissecting the mouth I found some teeth still persistent, for the most part very small, entirely useless for retaining prey, and very many of them left their sockets as I detached the membrane covering them. I cannot give any explanation of this condition, except age; the snake had been in the Zoological Gardens some considerable time.

Professor Turner (15) observed an extreme case of atrophy in the skull of a grey seal (*Hydrochoerus gryphus*). The animal was caught near Montrose. No teeth were present in the upper jaw except the pair of canines, which were well developed, and occupied their usual position. No alveoli existed in the upper jaw except those in which the canines were lodged. There was complete absence also of teeth and alveoli in the lower jaw, except the pair of canines and the sockets in which they were lodged. Whether the case was one of premature atrophy or non-development of the teeth, it is difficult to state

CHAPTER III.—CONSTITUTIONAL DISEASES AFFECTING TEETH.

I wish to notice under this division of my subject a curious cause of premature shedding of the teeth, although it does not come strictly within range of the term atrophy of teeth, for the condition is brought about by atrophy of the alveolus, with the teeth still *in situ*, consequent on constitutional disease. Nevertheless I shall give an account of the phenomenon here, for it may possibly help to explain some cases of edentulous jaws in animals. Let me record the following case by way of illustration:—

This specimen is the skull of the racoon-like dog (*Nyctereutos procyonides*). The animal was affected by that singular disease, *mollities ossium*. The malady has not spared a single bone; they are all curved and twisted, and, now that they are macerated and dried, as light as cork. The alveolus has undergone absorption to such an extent that the fangs of the teeth stand "high and dry" for a considerable extent above the bony margins of their sockets, so that when the skull was macerated, several of the teeth came away with the buccal mucous membrane. The teeth which still remain possess sockets only half as deep as they should be, in the natural condition, or to accommodate the teeth still sticking in them. A glance at the upper jaw shows the extent of the absorption, for the alveolar arches and the hard palate form a perfectly level surface. This state of things is by no means uncommon, particularly among carnivorous animals. I am not aware that any writer has noted the condition of the teeth and jaws in cases of *mollities ossium* occurring in the human subject, and I have not had much opportunity of seeing cases of this formidable malady. Fortunately it is a very rare affection, but I believe dental surgeons are acquainted with a peculiar form of shrinking of the alveolus which occurs without any particular condition of the constitution being associated with it. Possibly there may be some such constitutional state connected with it, but I would be understood to express myself cautiously on this point—it is merely a suggestion at present.

In the spring of 1882 I found a well-marked example of this disease in a monitor lizard: all its bones were so soft at the extremities that they could be impressed almost as though they were soft gutta-percha. In this case the teeth also shared in the general softening; they could be bent backwards or forwards in the jaws as though they had been decalcified in hydrochloric acid, and many of the teeth had fallen out.

Rickets.—It has long been recognised that in children affected with rickets the teeth are generally late in making their appearance above the gums. Little attention has been directed to this subject beyond the observations of Mr. Shaw, who, in his valuable and oft-quoted paper in the "Med. and

Chir. Soc. Transactions," suggested that the cause of the delay depended on the fact "that the jaws in rickets were usually small and dwarfed, whereas the teeth were of usual size; so that the disease caused a disproportion in the relative size of the two structures." Last winter (1883) I exhibited at the Pathological Society numerous examples of rickets in monkeys. In many of these specimens I exposed the developing teeth, and found the tooth sacs extremely thickened, instead of being thin, delicate, and almost transparent, they were thicker than the skin on one's finger.

The specimen shown is an instance of rickets occurring in a lion; although the animal is nearly full grown, the teeth in the upper jaws are only just appearing. The outer plate of the maxillary bone has been dissected off in order to determine the condition of the dental follicles. In the case of the canine, the fibrous envelope was nearly as hard as gristle, and instead of being almost imperceptible, actually creaked under the knife like cartilage. Whether this thickening of the capsule is sufficient to explain the delay in teething so generally associated with pronounced cases of rickets in human beings, I must leave it to those practically acquainted with these matters to determine.

CHAPTER IV.—DISEASES OF THE TEETH.

The subjects treated in this section deal with caries, erosion, attrition, inflammation with abscess of the pulp, and odontomes.

Caries.—As far as I have been able to ascertain, caries is by no means so frequent in animals as in man, and what must be considered important is the fact that carious teeth are far more common in domesticated than in wild animals. Most have, no doubt, seen cases of caries in horses. I have in my collection the skull of an ass, with three of the teeth attacked by caries, one of them being completely destroyed with the exception of the fang. The remaining teeth are very irregular in size, and where gaps exist in the upper series, the corresponding teeth in the lower set have elongated to supply the deficiency. Dr. Magitot mentions the occurrence of caries in the teeth of anthropoid apes. The Odontological Society's Museum has a specimen illustrating caries in the tooth of a sperm whale, in which the pulp has become exposed, ending in abscess. I have met with instances of this affection in a crab-eating racoon, three of the molars being rather severely attacked, and in other carnivorous animals kept in confinement. The lion whose case was described in the last chapter had a decayed last molar on the right side. Last winter an example of caries came under my observation in a kangaroo, three of the molars being affected.

Erosion.—This seems the most suitable place to mention erosion of teeth, of which condition a very striking example was described and figured in the Transactions of this Society, by Dr. Murie, in the case of the sea-lion (*Otaria jubata*) brought direct from the Falkland Islands. In this instance, not only the whole of the smaller-sized molars and premolars, but also the great canines of both the upper and lower jaws, were worn in a circular or grooved manner, as if compassed by a ring in their middles. The canines were not completely furrowed round, but rather deeply excavated behind. The tips or crowns of both canines and grinding teeth were ground down and flattened to a certain degree only. The worn surface was blackened, smooth, and highly polished. Dr. Murie found only one other case in many seals he examined. No satisfactory explanation has been advanced as to the cause of this singular condition. I have entered into details concerning this case as it is a very important one, inasmuch as it showed clearly enough that erosion in human teeth did not result from the excessive use of the tooth-brush as many maintained.

Dr. Murie's communication was made to the Society in 1870. Since then Dr. Magitot has published his work on "The Anomalies of the Teeth in Man and Animals" (1877), in which he mentions the subject of erosion, but seems to be unaware of Dr. Murie's paper. He mentions how excessively rare the occurrence of erosion in animals is, and records only one example. This concerns the teeth of a cow observed by M. Goubaux. The specimen is in the museum at Alfort, and is thus described by Magitot: "The animal was two years and a half old; it had four teeth of the second, and four of the first dentition. The anterior face of the two central incisors presents a deep transverse furrow entirely horizontal, situated at the upper third of the crown, and at an equal level for the two teeth. The other teeth do not present anything analogous."

Abscess of the pulp in whales (16).—It appears from the researches of Eschricht that a certain species of whale (*Orca*) is liable to a singular affection of the teeth, due to friction. It is a well-known fact that the teeth of the sperm whale, or cachalot (*Physeter Macrocephalus*), consist of a hollow cone of dentine coated by cement containing in its interior osteodentine, irregular masses of which have been found loose in the pulp-chamber.

According to the observations of Eschrict, the teeth of the orcas resemble those of the cachalot, inasmuch as they represent a curved cone with an obtuse point, and a comparatively broad base, only it is most commonly somewhat compressed, having two indistinct margins, an exterior one convex, and an interior one concave. But more minutely examined, especially when cut through transversely, it is observed to have quite a different structure; for whereas the cachalot's teeth only consist of dentine covered with cement, but without any enamel, at all events except at the extreme tip, from which it is soon worn off, the teeth of the orcas are, on the contrary, provided with a complete covering of enamel to their free portion. Thus it is, properly speaking, only a very small piece, soon worn off, that deserves the name of crown in the part of the cachalot's tooth standing out of the gum, and all the rest of it may be called a projecting part of the fang; but such is not the case with the teeth of the orcas. In these a constricted part, the neck, encompassed by the gum, may be perceived between the crown and the fang, at least in the teeth of young individuals; the crown is gradually worn off as the animal gets older, but the fang, though in the full-grown tooth at least one and a half times longer than the crown, never grows out to repair the loss, which may be supposed to take place in the cachalots, as we know from our own observation that it takes place in the beluga, even to an extraordinary degree. The earliest form of the teeth of the orca is that of a single cone almost an inch and a half high, half an inch to one inch broad. They are not only open teeth, but filled with pulp to such a degree that their solid walls, though consisting of two layers of different kinds—in the crown of dentine and enamel, in the root of dentine and cement—have scarcely anywhere a thickness of more than half a line, not even at the very top of the crown, while the diameter of the hollow of the pulp is about an inch. Like teeth in general, they present, at a very early period, when removed from their natural places, a certain resemblance to small caps of paper, and are of course extremely brittle.

(*To be continued.*)

ON THE EXTRACTION OF TEETH BY THE NUN'S METHOD.

By Dr. David.

[Owing to press of matter, we are compelled to withhold the rest of this article until our next issue. — Ed "*B. J. D. S.*"]

TRISMUS NASCENTIUM; OR, THE LOCKJAW OF INFANTS.

Its History, Cause, Prevention, and Cure.

Illustrated by Cases and Post-mortem Examinations, with Statistical Table of Two Hundred and Twenty-nine Deaths.

By J. F. Hartigan, M.D., of Washington, D.C.

(*Concluded from p.* 156.)

Dr. Nailer, of Mississippi, declares that about two-thirds of the deaths amongst negro children are from this disease, and so uniformly is it fatal that a physician is never sent for. According to Drs. J. H. Pooley, W. B. Fletcher, J. S. Bailey, Baldwin, Collins, Thomas C. Black, Rush, Fourcroy, Valentine, Von Busch, Goelis, Ducille, Campet, Wooten, G. T. Maxwell, Bierbaun, and John M. Watson, of Nashville, the disease runs its course, in spite of treatment, to a fatal issue. Dr. H. C. Bryson thinks that climate or season exerts but little influence in its production.

S. L. Grier, M.D., of Mississippi, "On the Negro and his Diseaes," affirms that trismus decimates the African race upon our plantations within the first week of independent existence. He has known more than one instance in which of the births for one year one-half became the victims of this disease.

Dr. W. L. Sutton, referring to its great fatality, remarks: "This is strikingly the case in the West Indies and in our Southern States, where some families are awfully scourged, whilst their neighbours almost or entirely escape."

Dr. Meriwether, of Alabama, writes: "It generally appears sporadically, rarely attacking white children, which is to be accounted for by the superior cleanliness of the white race." As opposed to this view the Editor of the "New Orleans Med. and Surg. Journ.," vol. ii., 1846-7, remarks that the affection is by no means confined to coloured children in that city, but is occasionally met with in the most respectable white families. This statement is confirmed by the annual report for 1882, which shows the mortality to be 172 (not including 106 cases reported as infantile convulsions), of which number 90 are white. Similar reports come from other Southern cities.

Dr. A. Vogel saw the disease under all conditions of the weather, and did not believe meteorological considerations had anything to do with it. He made two post-mortems without finding any navel lesion. Dr. Collins says: "We have never been able to discover any peculiar morbid appearances which would justify us in offering any explanation of its pathology." Romberg, Olliver, and Prof. Doherty consider that it results from inflammation and ulceration of the umbilical vessels. Dr. E. Hughes suggested vaginal disease among the causes. Joseph Frank gives chilling of the body in any manner as a cause, while Duges mentions this as the sole agent in its production. Bajou who has had a large experience at Cayenne, attributes it to cold and sea air, as it is unknown in the interior; Dr. Evans to costiveness. Underwood seriously remarks: "The cause has at length been clearly ascertained, and happily its prevention, by Dr. James Clark, who, perceiving that those houses were free from the disease in which there were no fires, very soon demonstrated it to be owing to the smoke from the burning wood; the negro houses have no chimneys to carry it off."

A few words with regard to filth, bad ventilation, and hygienic surroundings. Dr. P. C. Gailliard, after quoting crowded localities, bad or insufficient nourishment, &c., seys:—

"But these do not act with more energy in this than in any other disease, and in fact seem to exert no peculiar influence whatever; for the disease is not observed to be most common in the localities where these conditions most especially obtain, as for instance, in the manufacturing and mining districts of England and Ireland, and in large cities everywhere. Indeed, I have seen it under every circumstance; in the well-kept elevated and isolated spot in the country, as well as the crowded, filthy, and lowly situated city hovel."

Dr. J. S. Bailey ("Med. Record," vol. v., 1870), in reporting three fatal cases, says; "Vitiated atmosphere and want of cleanliness did not produce the disease, for the apartments were cleanly and well ventilated."

Dr. Ingham ("Amer. Journ. Obst.," vol. viii., 1875) alluding to a local epidemic of trismus on a Southern plantation gives similar testimony.

To show the relative frequency of the disease in the Lying-in Hospital of Copenhagen, and the affiliated houses scattered in different parts of that city, Dr. Stadfeldt says there were 11 deaths in 10,000 children born in the former, whilst in the latter there were 82 in about the same number of births. "The danger of trismus occurring is therefore greater in the affiliated houses, although the hygenic conditions are better."

Dr. Harrison said ("New Orleans Med. and Surg. Journ.," May, 1846): "We find it scarcely existing on the main land of Iceland, but in the island of Heimacy, adjacent, such has been its fatality that not a child has been raised there. These are highly valuable historic facts, which forbid the idea of its having any connection with umbilical injury."

(*To be continued.*)

British Journal of Dental Science.

LONDON, APRIL 15, 1884.

In Memoriam.

THE LATE PRINCE LEOPOLD, DUKE OF ALBANY.

SINCE our last issue an event of the most extremely melancholy nature has befallen alike the Head of the Nation, and the Nation itself. The sympathy which all her subjects must accord to Her Majesty in her bereavements has, in the present instance, been more than ever called for. The extreme suddenness, the unlooked-for ending of a young life so full of promise, occurring as it were in the very thick of pleasures, and almost while a *fête* was being held, lend additional pathos to an episode already wrapped in the most sombre guise of a bitter mourning. The facts of the lamented Prince's demise have long since been common property, it only remains for us to express the respectful regret and sympathy which the dental profession accord to Her Majesty at this time of sadness and heart-searching sorrow. Not only does the memory of the late Duke of Albany appeal to us as subjects of our Sovereign, but also on account of the well-known character of the late duke as a contributor to the literature and art of the country. There can be but one feeling throughout the length and breadth of the country, and that one of the bitterest regret for the loss to the community, and of sympathy with the bereaved relatives of the ill-fated Prince. And while we mourn for the Duke of Albany, we must more than that mourn with his illustrious spouse. The Duchess of Albany, whose life, now in its springtide, has learnt the bitterest sorrow existence can afford, consolation we cannot pretend to offer, but we may be permitted to express our condolences and to once more add that the Duchess has a nation mourning in concert with her sorrow.

PROVISION IN CASE OF SICKNESS.

The Medical Sickness, Annuity, and Life Assurance Society, has, we are pleased to say, and at our suggestion, extended its advantages to all licentiates in dental surgery of the United Kingdom. Every prudent man naturally takes the precaution to guard against the effects of loss by fire, &c., and the cruel result of sudden or premature death on those dependent on him, by adequate assurance in some one or more of the many responsible assurance offices. But hitherto, bitterly as many have felt the necessity, there has been no proper opportunity of timely provision in case of sickness, open to the professional man. For the working man and employés generally, there are numerous Friendly Societies, Clubs, &c., which have been proved for years to have been of untold advantage; but for the medical or dental practitioner, there has been literally no available source of ameliorating the dire effects of sudden or protracted illness, notwithstanding that, from the absolutely personal nature of his vocation, illness means cessation of income with all its concomitant horrors and discomforts, just at a time when the reverse is urgently needed. We are not, of course, alluding to illnesses of short duration—although such cases would equally receive support—but of those which often come upon a man without much notice, and continue for long and indefinite periods.

Such an opportunity is now offered to all medical practitioners and dental licentiates. We had hoped, and still do hope, that the executive committee may see their way, after further consideration, to extend the scope of the society's usefulness by including all reputable dental practitioners. We can well understand the necessity of their fixing a line of demarcation, and that that of Licentiateship should naturally suggest itself; but trust they may yet feel that some such basis as admits to membership of the British Dental Association may be substituted. It is the object of the society to have as widespread a sphere of usefulness, whilst at the same time it shall be as self-sustaining, on the principles of mutual support, as possible. To this end, none but men of strict integrity will be accepted as members, and with a view to safeguarding the interests, and reducing the working expenses, all medical members will take upon themselves the duty of periodically visiting any ailing members living within a radius of two miles, and the expenses are otherwise to be kept at the minimum for effectiveness.

The society consists of three distinct branches, viz., The Sickness, The Annuity, and The Life, and any member is entitled to subscribe to any one, or any combination of these branches, or to vary or increase in the future under equitable conditions.

The Sickness Branch assures £2 2s. 0d., £3 3s. 0d. or £4 4s. 0d., per week, in case of illness, for its first six months' duration, and half the amount for its continuance, no matter how long; but such benefit ceases at the age of sixty-five.

The Annuity Branch secures annuities of from £25 to £50, commencing at the age of sixty-five, when all premiums cease.

The Life Branch assures at death, sums of from £25 to £200 for premiums computed, so that they also cease at the age of sixty-five, and would, under ordinary circumstances, have a surrender value of 70 per cent.

The premiums are calculated on the most moderate scale that mutual support and security will admit, especially with regard to all premiums ceasing at the age of sixty-five.

We earnestly call the attention of our readers to the benefits to be derived from this new society, which being inaugurated, as it is, under the auspices of the British Medical Association, and supported as may be seen in the report on p. 378, is practically assured of success, and also that entrance will be, until the meeting of the permanent committee (probably in June or July), by simple declaration as to state of health, &c., instead of by medical examination, as it will be after. We would, therefore, advise all intending to join, to do so forthwith. The institution is needed, and should be supported liberally.

LEGAL PROCEEDINGS BY A DENTIST.

A case having important legal bearings for Dentists was recently tried at Barrow.

J. W. Carmichael v. Steele, the Trustee of the Estate of William Yates, Deceased.

In this case Mr. Nalder appeared for the plaintiff, and Mr. Thompson for the defendant. Mr. Nalder, in opening the case, said, the claim was brought to recover the sum of 14 guineas, the price of a set of false teeth, supplied to Mrs Yates, the wife of the testator. As the lady was wearing the teeth at the present time, and they were a very fine set, he could not imagine what was the defence. Mr. Thompson said his defence was, that although the teeth were ordered in the lifetime of the testator he knew nothing about them, and did not authorise his wife to get them, also that the teeth were of a character far too expensive for a person in Mrs. Yates station of life, she being really a working man's wife. Such sets of teeth, set in gold were generally supplied only to ladies in a much higher position. He would also prove that the charge for the teeth supplied was excessive.—Mr. Nalder : There has been no complaint until now. The plaintiff, who is a surgeon-dentist, practising in Barrow, was then called, and stated that Mrs. Yates ordered the set of teeth in question, and at the cost named. She was told what the price would be before they were supplied, and she had never complained to him that the price was excessive. He considered that the teeth were suitable for a person in Mrs. Yates position, as she had told him her husband had left £700. —For the defence Mrs. Yates said at first her charge for the teeth was to be £2 10s. but her husband would not allow her to have them. Afterwards the plaintiff showed her a set of teeth for 14 guineas, and she told him she could not afford them. He then said he would not charge that much.—George Frederick Dean, surgeon dentist, said he had examined the teeth in question, and considered thst £8 was a reasonable price for them. They were not a full set for the top ; they were two teeth short. —Cross-examined : I have charged £20 for a complete set, top and bottom, set in fine gold.—His Honour gave judgment for the sum of ten guineas and costs.

QUININE : ITS USE IN DENTISTRY.—Dr. Taylor, writing in the "Illinois State Journal," says: "A very frequent complaint met with by Dentists living in malarial districts is *malarial neuralgia,* having the following symptoms to assist in the diagnosis. From a slight uneasiness to an intense aching of the teeth, or only a general tenderness of the teeth and gums. In some cases, swelling of the face on the side the pain occurs ; swelling extending in the direction of the nerves ; pain reaching, in extreme cases, to the ears and eyes, with a profusion of tears ; headache at the base of the brain, and aching of the back of the neck; backache, limbs aching, with a general lassitude and indifference; yawning and drowsiness; fetid breath odour of a dead body; sometimes sordes on the teeth; tongue furred; colour from white to brown, shape of the tongue, large and flabby, with sometimes imprints of the teeth along the edges; sometimes an irregular appetite with a disturbed condition of the stomach. All the symptoms of miasmatic poisoning may accompany the pain about the teeth, but in a few cases only the pain in and about the teeth will be manifested. After a careful observation to see that the teeth are free from decay and tartar, and need no local application, the call evidently is for systemic treatment with quinine, in good size doses. The same treatment will be beneficial in the conservation of exposed pulps of the teeth, when the general health is labouring under the same condition. Beneficial effects may be looked for in the first stages of inflammation of the roots of the teeth by the free use of quinine. Teeth whose roots are filled and those having large fillings, with live pulps, that occasionally ache, will be relieved, as a general thing, by the use of quinine. Acute tonsolitis is often cured by a full dose (grains x or xv) of quinine given at the commencement. It may be mentioned, that neuralgia that assumes a periodical type that is not dependent upon malaria, will be relieved by a judicious use of quinine."

NAPHTHALIN AS AN ANTISEPTIC.—Dr. Fischer, of Strassburg, speaks highly of naphthalin as a substitute for iodoform. In German surgical clinics iodoform has a very wide use, and several cases of poisoning have occurred which have been put down to its use. Iodoform has very many disagreeable qualities which restrict its use in dental surgery, and so naphthalin, which, according to Dr. Fischer, is free from these, may prove a useful adjunct to the operating room. Its smell is less nasty than that of iodoform: it causes burning but not pain; and if it is used in powder it will not irritate tender granulations. (Anschütz.)

WE learn from the "Sussex Daily Post" that, at a meeting of the Committee of Election of the Royal Alexandra Hospital for Sick Children, Brighton, held on Friday last, for the purpose of appointing a consulting dental surgeon, the following resolution was passed: "John Dennant, Esq., having resigned his position as dental surgeon to this institution, after having ably filled the office from the commencement of the hospital for a period of fifteen years, it is resolved that he be, and he is hereby appointed consulting dental surgeon to this institution."

Died in a Dentist's Chair.—A sad occurrence is reported to have taken place at Scranton, in Philadelphia: A Mrs. S. went to a Dentist to have some teeth extracted, the anæsthetic was administered in equal quantities of chloroform and ether. After the first was given, two teeth were pulled; then another dose was given, and nine teeth were extracted, after which a third was administered and five more teeth were taken. The frightened Dentist then realized that his patient was dead, and had been for several seconds before the last tooth had been taken out. Efforts were made to restore her, but they were useless. The coroner is holding an inquest. Mrs. S. was forty years old and the mother of seven children, the youngest being four months old. The treatment she received in the Dentist's chair is the subject of severe comment.

Swallowing Artificial Teeth.—Probably the following is the only instance in which the teeth were not recovered, and yet the patient long survived. While asleep the sufferer suddenly became conscious of some large, rough substance passing into the throat. He was about the same time, seized with a violent retching, but could not vomit; even with his face near the floor and body on the bed, with active titillation of the fauces with the finger, he could not provoke emesis or dislodge the foreign substance. Each effort made for the removal of this body only seemed to cause the obstruction to pass further down, which finally entered the stomach with a very sharp, stinging pain. He now became easy, but very anxious, for he suddenly thought of his artificial teeth, and after diligently searching for them, he became painfully aware of his unfortunate situation. Careful examination of the upper part of the mouth showed the imprint of the artificial plate in the mucous membrane, which measured two inches wide by two and one-half inches long. There were four front teeth on the plate. In view of the insolubility of vulcanised rubber and porcelain teeth in the fluids of the body, he was directed to eat such food as would make the most solid matter in the bowels passible, hoping thereby to have the plate and teeth incorporated in the mass and expelled. Failing in this for some time, he then, on his own accord, took one-half pint of castor oil, with no better result than before. As the patient was not suffering, it was concluded to await developments. Nine months has elapsed, and yet the patient is apparently in good health, except on occasional pain in the abdomen, which he attributes to the missing teeth. Several cases are on record where persons have swallowed their artificial teeth, and died soon after

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the Publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against one another. All makers, vendors, and inventors, ere invited, with strict impartialisy, to contribute towerds this end.

TRAVELLING HAND MIRROR.

Mr. Josiah Ritchie has a new mirror most handily arranged for travelling on account of its safety and portability. The glass—bevel edged—is 4½ inchesby 6½ inches, and fastened on to a thin board which forms the lid of a neat japanned flat box having on its bottom a thick wire handle, hinged firmly so that it may be opened out to any extent and always bearing the weight of the glass without shifting. It may therefore be used as a handle, a back rest to support the glass upright on a table, or to hang upon a wall or projection. When out of use the lid may be reversed (looking glass inside) and the handle doubled down flat, so occupying very little room.

TRAVELLING BOTTLE CASE.

Mr. Ritchie has also exceedingly neat pocket boxes of bright metal, fitted with spring divisions and covered with silk for small bottles for various tinctures, nerve pastes, stoppings, &c. These boxes are fitted with spring catch lids and of many sizes designed to hold from three to eighteen bottles. These cases are light, elegant, and calculated for general use as well as being safe for travelling.

Dentist's Fees in the Good Old Days.—The following curious advertisement has come down to us, through just a century of time. It is interesting, as giving one an inkling of how the profession lived, and charged we may add, in the good old days: Martin Van Butchell, Surgeon Dentist, attends at his house, in Upper Mount-street, Grosvenor Square, always from 10 till 4; open till dusk. Advice, £1 1s.; taking out tooth or stump, £5 5s.; a whole under row, £42; upper row, £63; an entire set, £105. Natural teeth, £10 10s. each. No transplanting. No annual patients. N.B.—The money paid first. This was the eccentric doctor who used to ride a pony in Hyde Park, painted in various brilliant colours; and who kept the embalmed body of his late wife in a glass case in his drawing-room.

Abstracts of Foreign Journals.

MONATSSCHRIFT DES VEREINS DEUTSCHER ZAHNKÜNSTLER.

"ON THE POSITION OF THE PATIENT during an operation in the Cavity of the Mouth," by Gust. Ad. Könitzer, Jena.

An experiment has lately been made by Rose of Zurich, in which, through the position alone, all operations in the cavity of the mouth can be carried on in deep chloroform narcosis. The patient is so laid on his back, that while the body rests horizontally on the operation table, the head hangs over the edge of it, so that, from the pressure beneath, all the blood accumulated in the mouth can find an outlet through the nose, or even through the opening of the mouth.

This method of operation is only new in practice, as something of the same method was used by Langenbeck of Göttingen, his patients being placed on an inclined plane, so that the upper part of the body was the lowest in position. He did not consider that by this method any danger was to be apprehended; and Rose has continually used this method in all operations in which *inspiration* of the blood would have to be feared in the customary position. He calls this method the operation with the hanging head. In the university hospital at Jena, the method has been used by Prof. Reid four times. One case was that of a Mrs. R——, of Weimar, a tolerably stout and well-built American. She had had no illness of any importance; but had for a long time won, a set of artificial teeth, which took the place of the molar and pre-molar teeth, which had been extracted on account of caries. After some time she noticed where the teeth had not been removed for a longer time than usual, a swelling of the right side of the hard part of the palate, over which the gum was slightly ulcerated. She left off wearing the artificial teeth, but observed a constant increase of the swelling, so that when she came to the hospital it included the whole of the upper right alveolar apophysis and a part of the hard palate. The upper surface was ulcerated and bled constantly on being touched, causing the patient to be anæmic in a high degree. She determined to have it removed by an operation. It was conducted in the following manner, in deep chloroform narcosis. She was laid on her back, so that the neck lay on the edge of the operating table and the head hung over. In this position it was fixed by an assistant who, kneeling on the ground, held it in both hands. During the whole operation the blood flowed freely, but could be stanched by the application of small sponges soaked in a weak solution of *Liquor Ferri.* Perchlor also, by sprinkling iced water, so that bandaging was unnecessary.

The patient was in a deep narcosis during the operation, and blood flowed freely through the wound, partly through the nostrils, without injury to the breathing. The patient had felt nothing of the operation, and awoke without headache or being sick. The reaction after the operation was inconsiderable, the healing proceeded quickly and without interruption. Still Rose's method has some disadvantages, as for instance, it cannot be used in the extirpation of great swellings of the tongue, as the position of the hanging head renders the upper surface of the tongue inaccessible. Sickness also, which has not yet been noticed in these cases, might have very bad consequences. More important still is another disadvantage. It has been observed that bleeding in all great operations, in or from the cavity of the mouth, would be much increased through the inclined position of the whole body, and especially of the head. The stanching of this bleeding either temporarily through compression of the carotids whereby the equal compression of the *jugular* vein might be dangerous through the rising of blood to the brain, or definitely through bandaging the vessels concerned, is fraught with greater danger than if the patient were in an upright positon. Dr. Reid has a method which can be safely recommended. The patient sits on a high stool, so much raised that his head is a little lower than that of the operator. The latter can stand or sit before the patient. An assistant, who stands behind or at the side, fixes the head so that it inclines forward, and in the operation the blood can flow outwards freely. In this position the patient can receive chloroform without danger of inspiration of blood, but the assistant must be very careful not to let the head move from its forward inclining position. To prevent the patient from sinking down from the stool it is desirable to fasten him in. A long cloth can be laid over the thighs of the patient, and with both ends made firm to the back of the stool. The feet and arms of the patient can be easily made firm by means of cloths. This method needs no praising; its simplicity recommends it, and it is to be hoped it will become as widely known and valued as it deserves.

DENTAL PRACTITIONER.

"EROSION OF THE HUMAN TEETH," by C. A. Kingsbury, M.D., D.D.S.

The opening lines remind us that although writers from the days of John Hunter have treated of erosion of the teeth, they have thrown but little light upon the subject. The subject of this paper is that special form of erosion which occurs in adults and in persons of more advanced age, and excludes all affections commonly traced to syphilis or exanthematous disease. The central and lateral incisors and cuspids are the teeth which suffer mostly. In other cases the bicuspids and first molars also are affected. The erosive action is generally confined to the buccal or labial surfaces. grooving the teeth transversely near the margin of the gum, In some cases over-sensitiveness is present, in some it is absent. In many cases Dr. Kingsbury has noticed an attempt at repair by a growth of secondary dentine, or consolidation of the dentinal tubules. In rare cases erosion exists upon the lingual surfaces of the lower teeth. The author has seldom met with vertical grooves on the labial or buccal surfaces of the teeth. The cutting edges of the incisors and cuspids, in some instances, become eroded, and the action has gone on until one-third of the crown was affected.

Upon the grinding surfaces of the cuspids, bicuspids, and molars, there are cups formed by loss of matter, not due to mechanical abrasion in mastication, but to erosion. The characters of this erosion are so complex as to render its etiology one of great doubt. Dr. Kingsbury believes that the presence of a very acid saliva, coupled with the friction of brushes and gritty tooth powders, are active factors in causing erosion. But these agents are not enough to fully account for the erosion. Careful histological preparations have not so far shown the pathology; but Dr. Kingsbury believe they will do so. Dr. Kingsbury also seems to lean towards the hypothesis, that the varying condition of the blood causes more or less decalcification, and so render the teeth more liable to fall a prey to adverse conditions. The teeth affected by erosion are deficient in organic structure, either in the quantity, quality, or arrangement of their constituent elements, to an extent sufficient to render them more soluble in acids, &c. The best treatment is said to be gold filling, or gutta-percha, or phosphate of zinc may be employed.

NEW ENGLAND JOURNAL OF DENTISTRY.

"The Early History of the Massachusetts Dental Society," by J. T. Codman, D.D.S., Boston, Mass.

This paper, which is an address delivered by Dr. Codman before the Massachusetts Dental Society, is a chronological account of the formation and early history of the society. Its interest being purely a local one we refrain from offering our readers an abstract.

Literary Notices and Selections.

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

By J. WILLIAM WHITE, M.D.,

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

(Continued from p. 275.)

Let us establish a few general propositions :

First, hereditary syphilis can influence both dentitions. At first it was thought, with Hutchinson, that the second dentition alone was susceptible to this influence , but it has since been recognized that the first dentition may be affected as well as the second. M. Parrot has furnished incontestable proof on this point. In a fine specimen, which he has kindly placed at my disposal* —the dentition of a heredo-syphilitic infant, aged twenty-seven months—the two superior central incisors are strongly notched crescentally and present the most characteristic type of that which is at present described under the name of the "Hutchinson tooth."

Second, the first dentition appears to be very much less often influenced by hereditary syphilis than the permanent dentition. Where we find one case of first dentition affected we find fifteen or twenty of the second. I should state, however, that this proportion would be perceptibly modified if we took the precaution, in all autopsies of young children, to open the alveoli in order to examine the embryonic teeth. M. Parrot recently told me that in doing so he had often discovered lesions of the milk-teeth.

Third, the dental malformations occasioned by hereditary syphilis are commonly multiple and symmetrical—that is to say, we find several teeth affected, as a rule, and usually the corresponding teeth are similarly affected. If in an upper jaw the left central incisor is affected, the same condition will exist in the right central incisor. If one lower cuspid is affected, the other will present an alteration of the same nature. Such is the rule, though it is not absolute, but has its exceptions. There are cases where these malformations affect certain teeth only unsymmetrically; also where only one tooth is found to be affected. These are the unusual exceptions, overlooked for a time, but which have brought about a more careful study of the question.

These generalities established, let us now take up the particular descriptions.

Dental Erosion.—It sometimes happens that, in the description of a disease, one symptom or one lesion receives attention to the exclusion of others which are no whit less important or interesting, or which are even more important in clinical significance. As an example, dental erosion is but a part of a whole, and yet to read what has been written on the subject, to listen to the talk about it, one would think that all dental syphilis consisted in erosion,—an error against which it is necessary to protest at once. That which is called dental erosion is but one of a number of lesions—but one of the forms by which hereditary syphilis shows itself on the teeth, and perhaps, from the point which especially interests us, not the most important or significant. Under the common but incorrect name of "dental erosion" are designated diverse dental malformations, produced during the intra-follicular life of the tooth, and consisting in a peculiar alteration of the crown, which appears worn, corroded, worm-eaten, or *honeycombed* on a certain portion of its surface. One would say on seeing a tooth affected in this way that it had been cut into by an instrument or corroded by an acid. It resembles in appearance worm-eaten wood, and it is this appearance which gives it the name of erosion; but this lesion is not an erosion in the strict sense of the word.

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* **Cast No. 48 from collection of Prof. Parrot.**

Erosion conveys the idea of the wearing of a surface which has been previously normal; but that which is called dental erosion does not concern a tooth which, originally normal, has undergone later a corrosive action, but is the result of an imperfect formation of the tooth, the consequence of a temporary stoppage in its development. Before it issued from the gums it was the same as we see it ten, twenty, thirty years later, with such modifications only as time and functional use have impressed upon it. Such is the primordial idea which it is necessary to form concerning erosion in order not to mistake it, a common error, for the result of different pathological actions.

Let us consider the physical characteristics of erosion presented clinically under manifold and diverse forms. An indefinite number of varieties could be made if all the different forms were taken into consideration, but these are reducible to a certain number of principal types, to which the secondary forms are subordinate. Simplified in this way, the description of them becomes easier.

The different forms of dental erosion can be divided into natural groups, according as they affect the face or the free edge or grinding surface of the tooth. The first group consists of erosions affecting the face of the tooth. Several types offer themselves here. It will be necessary to recognise at least four, viz.: First, erosions "*en capule*" (in little cups); second, erosions "*en facettes*" (in facets); third, erosions "*en sillon*" (in grooves or furrows); fourth, erosions "*en nappe*" (on the surface). Let us as briefly as possible examine into each of these varieties.

(*To be continued.*)

Notices of Societies.

MIDLAND ODONTOLOGICAL SOCIETY.

The First Ordinary Meeting of the members of the newly-formed Midland Odontological Society was held at the Medical Institute, Edmund Street, Birmingham, on Thursday, April 3rd.—Mr. Thomas Howkins, M.R.C.S.Eng., the President, occupied the chair, and there were also present Messrs. Adams Parker, L.D.S.Eng. (Vice-President), Bennett May, M.B., William Thomas, M.B., Samson Gamgee, M.R.C.S.Eng., T. Dixon Miller, D.D.S. (Hon. Treasurer), Richd. Owen, Harry Owen, L.D.S.I., T. M. Cottam, L.D.S.I., L. Machin, L.D.S I., R. H. Fryer-Brookes, L.D.S.I., Edwin Roberts, L.D.S.Glas., J. W. Roberts, L.D.S.Glas., O. A. Dennis, L.D.S.I., Dr. J. S. Crapper, L.D.S.I., N. B. Symons, L.D.S.I., H. Granger, John Meanley, T. Howkins, jun., Geo. Lowe, W. J. Watson, L.D.S.Edin. (Hon. Sec.), and others.

The Hon. Secretary read the minutes of the preliminary meeting, which were approved and adopted; subsequently he read out letters of apology for non-attendance from Messrs. T. F. Chavasse, F.R.C.S., D. C. Lloyd-Owen, F.R.C.S., Professor W. A. Tilden, F.R.S., W Barkley, J. E. Sutton, R. M. Hatch, S. F. Clarke, H. Jones, W. F. Wade, M.D., and Thomas Richards, M.D.

The President then delivered his address, which will be found on page 350.

Mr. Adams Parker moved a vote of thanks to the president for the very able address he had delivered that evening. In doing so he remarked that he believed it was the first occasion that the dental profession of the Midland counties had met together for the purposes of encouragement and the advancement of the principles and mechanism of dental surgery. The event, he considered, a most important one in the history of dental surgery. In looking around the room he could scarcely say that he was personally acquainted with more than three or four. Such a thing ought not to be in the Midland counties, and he trusted that the reasons which had then brought them together would tend to teach them to know each other more cordially; that they would meet more often than formerly as members of a noble profession who were always ready and willing to devote their services to the aiding and relief of suffering humanity.

Mr. Samson Gamgee rose to second the vote of thanks, but before doing so he wished, as a member of the council of the Medical Institute, to welcome them under that roof. When that Institute was planned, and that building constructed, it was hoped to make it the home of the medical profession of the district, and at the present time, he heartily welcomed them as additional members of the great family of the medical profession, and congratulated them on having constituted their society. Difficulties would no doubt arise and must arise, but so long as they were met with good spirit, with the determination of surmounting them, with the positive resolution to do all and sacrifice something for the common good, so soon would the aspirations of the promoters be realised and all their anticipations come to pass. In seconding the vote of thanks to his old friend Mr. Thomas Howkins he had one great pleasure in following his colleague, Mr. Adams-Parker. They might judge of the respect with which he used the name when he looked upon him as the worthy son of one who, in the Midland counties, had conferred most honour on the medical profession, and had gained a fame which was not only known to Europe but the wide world over. Mr. Adams Parker had held for some years an honourable position in this district, and he (the speaker) congratulated the society on having him as a vice-president. He was only too happy to follow him in the seconding of the vote of thanks to the president, of whom he could say he was the oldest friend in the room. He remembered some twenty-seven years ago occupying the chair at a meeting of a society in London, on which occasion a paper was read on the "Use and Abuse of Tobacco." He was struck with the ability shown in the production of the paper, the writer of which turned out to be the president, Mr. Thomas Howkins. He watched that gentleman closely for the next few years, believing that he would make a mark and though it was a time when several good men were turned out, his prophecy came true, for Mr. Howkins carried off the gold medal for surgery. But apart from his cleverness and ability Mr. Howkins had another equally good quality, and that was good fellowship. In conclusion, he thanked them for the invitation to the meeting and seconded the motion with every possible pleasure, believing that in their choice of first president they could not have a better one than his professional brother, Mr. Thomas Howkins. (Applause.)

The motion was carried unanimously.

Mr. Howkins, in returning thanks for the vote, said there were many other matters which he should have wished to have touched upon, but as there was other business to be done, he thought it best not, but to defer those subjects for another paper, which he hoped to read on a future occasion. To Mr. Gamgee, he might say, the pleasure of the remembrance of their earlier days was mutual, and he reciprocated the good wishes which Mr. Gamgee had expressed towards him.

Mr. Richard Owen presented a paper which was read by his son, Mr. Harry Owen, taking for his subject the "Degeneracy of Dental Tissue and the Dietary Influence of Silicated Phosphates," for which see page 343.

Dr. Miller said, at the close of the paper, that he hoped what they had just heard was an augury of what was to come, and that the society would be not only such in name, but of permanent and real character as well. It was to be hoped that, during the course of their meetings, a great many subjects would be brought forward which would be of special interest to them as Dentists. They had to thank Mr. Owen for the first of a series of papers they anticipated would be forthcoming during the current session. The question of of the degeneracy of dental tissue had been under consideration for many years, but did not now seem to have lost its interest. Practitioners were far from unanimous as to cause of decay, and were far from unanimous how to cure it. It would be a good thing if some one would discover a means to arrest decay, even if there was no building up of new material after. The subject deserved great notice, and he hoped it would be taken up by the members of the society, and that at some future time they would give a record of their experience. As regards the suggestion of the diet of the wives and mothers, he was afraid they would not go so far as to deny themselves the pleasures of the table, even if the health of their offspring were to benefit by it. He argued that they ought to look to the general health, for when the body was strong the teeth would not long remain weak, for what helped to build up the one helped to build up the other also. In conclusion he spoke of the benefits which had been derived to his family from the eating of oatmeal.

Mr. Roberts said that several cases had come under his notice in which people had eaten oatmeal porridge without any benefit to their masticatory organs. He thought the degeneracy of the teeth in young persons was not so much due to their dietary as to the maternal influence during intrauterine life. He had sufficient confidence in the mothers of England to believe that they would choose food that would be beneficial to their young if the matter were put properly before them, but that he considered was the business of the surgeons.

A discussion ensued between Dr. Miller, and Mr. R. Owen on the quality of brown bread, the latter arguing that it could be made acceptable to the palate so that people could take it equally with the white; it was simply a matter to be dealt with by the cooks. The difficulties pointed out by Dr. Miller arose more from ignorance. He believed most women would follow out the dictates of common sense in the choice of food. He knew of many ladies who, in passing through the interesting period, had taken the food question into consideration, and so far as he was aware there had not been one disappointment. In reply to a remark from Dr. Crapper he pointed out that phosphate which was found in oatmeal was chiefly in the husks. If one took the fine oatmeal the phosphate was greatly reduced. If oatmeal has to be made a useful dietary it must be ground coarse, but to make porridge acceptable everything depended on the cooking. He could not understand the pleasure Scotchmen derived from porridge in the way they cooked it; it would want a better digestion than he could give to it. He contended that the oatmeal must be well and thoroughly cooked, and then it would be a healthful and delicious food. He could bear testimony to the lusciousness of the article as he had experienced it in his own household. Some people looked upon it as a common article, in fact too common to eat, especially after they had attained a position in the world. This, he believed, arose from ignorance, and people would not commit such errors if they only knew differently. He considered it as their duty to instruct people in the laws of food as well as to provide relief in their sufferings.

The President, in referring to the arguments for proper diet for a mother, pointed out that the second set of teeth were not formed *in utero* nor during the process of lactation, and therefore the diet of the mother could have little or no influence on the second set of teeth of the child. He expressed the opinion that when the teeth were once formed that no great change took place in them, and quoted the experiments and opinion of John Hunter on the subject. It had been his habit to recommend, and especially for young children, the eating of whole-meal bread, and his impression was that simple decorticated flour was by far the best food they could have. He was given to understand that the phosphate or the most nutritious part of the food was contained in the layer immediately under the outer husk, and if the outer husk were stripped there remained all the nutritious part of the flour. He had been particularly interested by the paper, and hoped that it would not be the last on the subject which would be presented.

Mr. Harry Owen was of the opinion that secondary dentine could be formed, but agreed that the improvement experienced in the person who went to America as mentioned was caused by a combination of circumstances—principally through the change from that conventional life formerly indulged in, to one under more healthy conditions.

The PRESIDENT remarked that the apparent improvement arose, in his opinion, from the absence of the decalcifying agent in the saliva which prevented decay going further, and that it was not the result of any improvement in the dental tissue.

Mr. OWEN continuing, argued that unless there was an improvement in the general physical tone there was no chance of an improvement in the dental tissue. He understood from persons who had studied the subject that there were six membranes of the oatmeal, the outer being ligneous, and consequently not nutritious, while the other five were all of a nutritious element.

Mr. WATSON proposed a vote of thanks to Mr. Owen for the paper which he had presented. He hoped that the discussion started that evening would bring up more papers on the subject, as he believed it was an open question whether or not the dental tissue could receive some benefit from proper nourishment. He felt more convinced than ever from what he had heard that dentine might be nourished and strengthened, if not actually repaired.

The motion was seconded by Mr. ROBERTS, and carried unanimously.

Mr. OWEN in response, said it was a matter they ought to discuss, and that had been the object of his paper without proposing an elaborate essay. He hoped the matter would be taken up again, and that each one would contribute a paper during the ensuing year.

Dr. CRAPPER next read a paper in which he demonstrated the absolute necessity of extracting the six year old molars, especially those in the upper jaw where the arch is overcrowded.

Mr. HARRY OWEN moved a vote of thanks to Dr. Crapper for his paper, remarking that, as the subject was an important one, he hoped it would be debated at length at some future time.

Mr. RICHARD OWEN seconded the motion.

Mr. ROBERTS expressed his gratification at seeing Dr. Crapper present, especially as he had been somewhat opposed to the formation of the society; but he now hoped that Dr. Crapper would become a member of the "Midland Odontological."

Dr. CRAPPER responded, and explained that his previous opposition had been through misapprehension, and promised to become a member of the society.

Specimens of regulation frames for various dental irregularities were exhibited by Dr. Crapper. Models of a large number of dental abnormalities, and also a number of natural teeth showing abnormal conditions, exhibited by Adam Parker, and specimens of continuous gum-facings (on Mr. Verrier's principle), mounted on vulcanite—one with the gum-facing worked on platinum, not thicker than a sixpence, exhibited by Gilbert Walker.

Mr. Watson remarked that they would be glad to receive specimens and models for exhibition, and they hoped in time to form a museum and library.

The proceedings then concluded.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.

A meeting of the Provisional Executive Committee was held 38, Wimpole Street, on Thursday, March 27th. There were present Mr. E. Noble Smith in the chair, Mr. Sibley, Mr. J. Brindley James, Dr. Clibborn, Mr. Major Greenwood, jun., Mr. Fred. Wallace, and Mr. Radley, Secretary.

The Secretary presented his report, showing a total of 333 members, and receipts of preliminary entrance fees, &c., to the amount of £228 2s. 6d.

After some further proceedings a communication was read from Mr. Gilbert Walker, L.D.S.Eng., raising the question whether Dental Surgeons or Dentists, either qualified or unqualified or both, would be eligible as members of the society. The question, which was thought to be an important one, produced an interesting discussion in which it was the generally-expressed opinion that the society should be ready to accept any gentlemen really and fully following dental surgery as a profession, and at first mere registration was suggested as a test. It was considered, however, that under all circumstances this would scarcely ensure adequate selection, and it was urged that it would be to the interest of all to keep the society as far as possible to the original lines—namely, the inclusion of only such gentlemen as might be assumed to hold a fair status in their profession, as by such means alone could equity among the members and a fair average of claims be realised. Eventually the following resolution, proposed by Mr. Sibley, was unanimously passed: "That any qualified registered Dentist holding the diploma of L.D.S. of the Royal College of Surgeons of England, Scotland, or Ireland, be eligible as members of the society." The Secretary was desired to forward a copy of the resolution to Mr. Walker, with a request that he would bring it before the notice of the dental profession through the columns of the "*British Journal of Dental Science.*"

The consideration of other suggestions was postponed until the general meeting, when full opportunity will be afforded for the discussion of any question, the adoption of which would necessitate an amendment of the rules.

The Secretary read the draft copy of the history, objects, and benefits of the society, which was approved and ordered to be circulated as arranged, and a consideration of the proposal forms brought forward for the decision of the Committee concluded the proceedings.

[All information may be obtained on application to the Secretary, 26, Wynne Road, Brixton, London, S.W.—Ed. "*B.J.D.S.*"]

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Ordinary Monthly Meeting, held Feb. 4th, 1884.

J. Smith Turner, M.R.C.S. and L.D.S. Eng., President, in the Chair

(*Continued from p.* 279.)

Mr. F. J. Bennett asked whether Dr. Elliott had made any observations with reference to the shrinkage of palladium amalgam.

Dr. Walker asked whether Dr. Elliott thought that the results obtained were affected by the metal used having been freshly filed, or by the filings having been kept some time.

Mr. Weiss said he was glad to find that the investigations of Dr. Elliott confirmed the results arrived at by Hallam thirty years, and by Sullivan forty years ago. The plan had often been recommended of inserting very moist amalgam first, and then taking out the excess of mercury by putting over it an amalgam from which most of the mercury had been pressed out in wash leather. Sullivan, as the result of very careful experiments, declared that this was bad practice, and that to obtain the best results the amalgam should be mixed moderately soft and inserted in this condition; Dr. Elliott's experiments seemed to confirm the truth of this statement, by showing that less shrinkage took place when the material was so employed.

Mr. Charles Tomes said Dr. Elliott had earned a tribute of praise for the great amount of pains he had taken over this investigation. He had himself some years ago began a similar inquiry, but had not sufficient perseverance to carry it out; and he was glad to find that in most important points Dr. Elliott's results agreed with his own. His experiments, for instance, showed him that amalgams continued to change for some time after apparently setting. There was, however, one point which Dr. Elliott appeared to have overlooked, viz., that the formation of an amalgam was probably always attended by some rise of temperature; in the case of rapidly setting amalgams the amount of heat produced was very perceptible. This rise of temperature would be attended with expansion of the mass, and so the initial specific gravity would be wrong. He thought that the fact that the crystal gold amalgam had a bad record might perhaps be accounted for in this way, and that it would be useful to make a few experiments as to the amount of heat disengaged during the first half-hour or hour after mixing. If it should be found that the crystal gold, for instance, gave out a good deal of heat, especially when mixed dry, this might serve to explain the anomaly he had referred to. Whilst he fully admitted the value of Dr. Elliott's investigations, he could not think that the results were strictly accurate. Some of the smaller differences might no doubt be accounted for by experimental errors, but for the larger some other explanation must be found, and he thought that which he had suggested was a very probable one.

Mr. George Cunningham (Cambridge) remarked that one useful result of such an inquiry as that which Dr. Elliott had undertaken was that it would enable an operator to select for a filling an amalgam which was good as regards shrinkage, whilst for the restoration of contour he would choose one with plenty of edge strength. Professor Flagg had done something to this end, but more yet remained to be done.

Mr. Walter Coffin regretted that the arrangement of the tabulated results in figures which were not percentages rendered it difficult to judge whether the remarkable variations in the numbers denoting changing density were beyond the limits of experimental errors. The influence of the heat of combination upon the determination of the initial specific gravity was, as suggested by Mr. Tomes, a very important point in the inquiry, but this could not even be estimated until something more was ascertained as to the co-efficient of thermal expansion of these alloys, as to which very little was known at present. It was impossible to assign any average amount of crushing strength from only a few results which varied as much among themselves as Dr. Elliott intimated, or even to form an opinion as to the accuracy of the methods employed without a knowledge of these variations. Determinations of the delicacy and difficulty of those undertaken involved, of course, many physical disturbances not recognised at first; and, on the whole, he thought that the results obtained, whilst undeniably testifying to the immense labour, patience, and ingenuity of Dr. Elliott, indicated an amount of variation from strict scientific accuracy which in their present form it was impossible to estimate.

Mr. S. J. HUTCHINSON remarked that mineralogists were accustomed to judge of hardness by seeing whether one crystal would scratch another. Had Dr. Elliott thought of testing the various amalgams in this way? The test was a simple one, and might possibly afford some useful comparisons.

Dr. ELLIOTT, in reply, said no one who had not actually undertaken an inquiry of this kind could have any idea of the amount of time and care required in carrying it out He had taken the utmost precautions to guard against errors, and although he did not pretend to assert that the results arrived at were strictly accurate, he believed that the errors were not great. At all events, there could be no doubt as to the correctness of some of the broad results arrived at—*e.g.*, that some amalgams, as Sullivan's, should not be used dry, and others not soft. He had not experimented with palladium amalgam, and it would not be very easy to do so, as this compound set very rapidly, and evolved a good deal of heat. Mr. Cunningham's suggestion was a very good one, and indicated another way in which such an inquiry as that which he was endeavouring to carry out might prove practically useful. If you have only a small anchorage for your filling an expanding amalgam should be used, and one that shrinks carefully avoided; this was the case also in pivoting. One difficulty with which he had to contend was the fact that different samples of the same amalgam might differ considerably in composition. Thus he had seen six analyses of Lawrence's amalgam, each of which differed in a striking manner from the others—one observer, for instance, finding a considerable proportion of a metal which some of the others did not find at all, or only a trace of. He had no doubt that the fact that on repeating the same experiments with nominally the same amalgam he obtained each time slightly different results was thus to be accounted for.

Mr. COFFIN said he could certainly confirm what Dr. Elliott had just stated. He found the analyses of two bottles of the same amalgam differ so considerably in composition that he thought he must have made some mistake; but on getting the analyses repeated by an eminent chemist very similar results were obtained, showing that the composition of the mixture was by no means uniform.

The PRESIDENT then proceeded to deliver his inaugural address.

AMONG the list of successful candidates at the R.C.S. Mr. Herbert Apperly's name appears as "Appleby."

INAUGURAL ADDRESS.

By J. Smith Turner, M.R.C.S. and L.D.S. Eng.

(*Concluded from p.* 308.)

It is nevertheless true that an amount of discontent exists amongst a few members on certain points of administration. The officials of the society, although elected by ballot, have been accused of cliqueism. I am not going to argue this matter in detail, but I would ask those gentlemen who have harboured such thoughts to analyse the council list for the last few years, and see if the changes in the list of office-bearers have not been as frequent as is compatible with the safe government of an institution such as ours, the management of which involves, in many instances, the administration of phases of law which, though unwritten, are tacitly understood by those who have gone through all the stages of service on the executive. Charges of nepotism have been whispered against the council. I grant at once that there are two or three gentlemen on the council whose fathers too have served in the capacity of councillors, and who have also been presidents of the society. But it is now some considerable time since these latter acted in an official capacity, and I should be sorry to think that this society should be deprived of the services of fit persons because they happen to bear time-honoured and work-honoured names. I think that the last two presidents of the society point to another conclusion, for neither of these gentlemen had any forerunners to recommend them, and as for myself I can only say that "it is a fair cry" from the work-bench to the chair of the Odontological Society, and yet, gentlemen, that journey has been completed to-night; and in my opinion, a society which has a record such as this cannot be fairly taxed with either cliqueism or nepotism.

Another murmur which has found expression in the pages of some of our journals is about the admission fee and the annual subscriptions of members. The society, it is urged, is rich, and so the expense of membership should be reduced. I would suggest that if the society be rich it has become so on the subscriptions of those who have been members from the first rather than on ours. But, gentlemen, is it rich? I much doubt it. The measure of an income is the charge upon it, rather than its actual amount. Time was when the vicar of Wakefield was "passing rich on forty pounds a year." His present successor would be passing poor on four times that amount. And so it may be with our society. Our funds have increased chiefly through the extra subscription charged to the London members.

We hear it frequently said by provincial Dentists that as they cannot attend the meetings they don't think it worth their while to join, and lately we have had a resignation for this reason. I think that the remarks which have been made should dissipate such views, for if I am right in my interpretation of the functions of the society, its advantages must accrue to the profession generally. But I venture to think that the monetary objection is still more untenable than the inability to attend meetings. The monthly meetings are no doubt the most essential part of our business, but their attendant expenses are but a small part of our outlay, and beyond those expenses the benefits of the expenditure are shared equally by all. But what are the reputed riches of the society? A vested sum of £2,000. Now, gentlemen, the time may not be far distant when the demands of the Dental Hospital and School may necessitate our removal from our present quarters, and but for the liberality of Sir Edwin Saunders it might have become the pressing question of the day with us. And although the pressure has passed away that is no reason for us to suppose that we are fixtures. On the contrary, the warnings which we have had should teach us to be, as far as possible, ready for such a contingency. I have alluded to the valuable museum and library we hold in trust for the profession; now I would ask, are we to rely upon the chapter of accidents for its preservation in an emergency? Or are we, like prudent stewards, to prepare for what to me seems the inevitable, and be ready, so far as we may, to provide a worthy home for them and for our society? Gentlemen, I need not seek to answer such a question, and I believe that, as your president, I shall best meet your opinions and consult the interests of our society, and of the profession at large, by acting in accordance with these views, and with your support it shall be my endeavour so to do.

Dental News.

ODONTO-CHIRURGICAL SOCIETY.

The Annual Meeting of the Odonto-Chirurgical Society was held in the Rooms, 30, Chambers Street, Edinburgh, on Thursday, March 13th, 1884. Mr. Andrew Wilson, L.D.S. Edin., president, occupied the chair.

The Secretary (Mr. Finlayson) read the minutes of the previous meeting, which were approved.

Mr. Macgregor then read the treasurer's report, from which it appeared that the income for the past year was £43 1s., and the expenditure £36 11s. 3d., leaving a balance of £6 9s. 1d.

The PRESIDENT said it was highly satisfactory that in a financial point of view the society was decidedly improving.

Mr. WATSON said that during the last year they had got two or three donations for the Library, one from Dr. A. Peterman, Frankfort-on-Maine. He sent seven volumes of an illustrated "Dental Register of Practitioners on the Continent," giving an account of their lives and titles, a very interesting work, and also copies of their Transactions. Mr Gaddes also sent a copy of his book, as well as the "Dental Record," monthly. In regard to the Museum several pathological specimens had been received during the year.

On the motion of the CHAIRMAN, the thanks of the society were awarded to the donors of the gifts.

Mr. CAMPBELL, Dundee, said he had very great pleasure in proposing the re-election of the Officers nominated by the Council. There was one change proposed—viz., that Mr. Amoore should be appointed Secretary in room of Mr. Finlayson, who retired. He was sure they had all done their work efficiently hitherto. As someone else was to propose a vote of thanks to Mr. Finlayson, he need not refer to the work done by that gentleman, further than to say that they would be very glad to have his services on another occasion. He then moved the re-election of those proposed by the Council.

Mr. CROMBIE seconded the motion.

Dr. SMITH said he had much pleasure in proposing a vote of thanks to Mr. Finlayson for his services. He knew what the office of secretary was, because he held it in different societies. It was an office which involved a good deal of trouble, it was very seldom a remunerative office, and very often a thankless one; but he was sure they would all agree with him that Mr. Finlayson had discharged his duties most honestly, efficiently, and with the view of doing all he could for the Society. They knew that he had to a certain extent systematised and reformed the arrangements of the society, more especially in connecting and framing its Transactions, so as to be more in accordance with the order adopted by other bodies of the kind. He had accordingly much pleasure in purposing that they should award Mr. Finlayson a cordial vote of thanks.

Mr. STIRLING seconded the motion, and said he was sure that the proposal would meet with a cordial response.

The CHAIRMAN said that considering Mr. Finlayson took office only after very great pressure, they were very much indebted to him for the efficient manner in which he had carried through the work of the session. He had accepted the office almost at the last moment, and very much against his will. The motion was unanimously agreed to.

Mr. FINLAYSON, in returning thanks, said that as the Chairman had indicated, he had done what he could to render the office of Secretary a useful one to the society, and he trusted that his successor would have even a greater amount of success than that which he himself, with his moderate ability, had been able to achieve.

The SECRETARY then announced that Mr. Arthur Bains, L.D.S.I., of Hanley, had been proposed for membership by Mr. Campbell, of Dundee, seconded by Mr. W. Bowman Macleod.

"TREATMENT OF SENSITIVE DENTINE," by Dr. P. Calvo.

Many patients are deterred from having cavities excavated for fear of the pain. The substances used for overcoming the sensitiveness of the dentine—chloride of zinc, caustic potash, Vienna paste, arsenic, &c., act as caustics, and usually devitalise the pulp. Hill's stopping was found to have the desired effect. Hill's stopping consists of gutta-percha, earthy salts, and oxide of calcium. When gutta-percha was used, no lessening of the dentinal sensibility occurred, and so it was inferred that the oxide of calcium was the active agent. Its mode of action is said to be (1) as an alkali it conjugates with organic acids, and with the fatty acids it forms soaps which are insoluble in water. It coagulates albumen, combines with carbonic and sulphydric acids. If rapidly hydrated it rises in temperature and is with difficulty soluble. Upon first introduction into a cavity it causes pain, probably due to to the rise of temperature. This pain can be prevented by drying the cavities before introducing the lime. The sensibility of the dentine is rapidly lost while it would seem that the pulp has its vitality in no way impaired. No change in the colour of the teeth occurs. Hydrated oxide acts similarly but less rapidly.

PROSECUTION OF A DENTIST.—An American lady brought an action against a Riverside Dentist for injuries sustained at his hands whilst he was performing a dental operation. The injury complained of was a cut inflicted upon the lady's tongue; the damages were fixed at 9000 dollars. The jury found for the defendant. It is proverbial that "there is many a slip." A case of this sort brings home the lesson of how cautious all operators should be.

DEATH FROM ETHER.—The Gloucester Infirmary was the site of this occurrence. A patient, aged fifty, a labourer by employment, was admitted for a cancerous growth about the gums and throat. To accomplish the removal of the growth, it was necessary to extract some teeth; those, namely, which were the source of irritation. After etherisation—the method does not transpire—a tooth was removed. It was then noticed that the breathing was bad, and the pulse failing. Artificial respiration was then tried, but failed to revive the patient, who succumbed in fifteen minutes from the commencement of etherisation. This patient, although weak, appeared to have had no organic disease. He was an habitual smoker. The saliva which he swallowed must, of course, have been heavily loaded with septic matters from the gangrenous surfaces of the gums and throat. We are not told whether a *post-mortem* was made.

REMOVAL OF THE GREATER PORTION OF BOTH UPPER JAWBONES WITHOUT EXTERNAL INCISION.—Complete anæsthesia being produced, Mr. Bellamy extracted the teeth of the upper jaw with forceps; he then performed Rouge's operation of detaching and raising the upper lip and nose from the superior maxillary bones, and so getting a good view of the anterior chamber. He next passed a small stout saw into the nostril, and divided the hard palate. This was completed by nipping through it with a pair of powerful Liston's forceps. The soft parts were next dissected up from the bones. The removal of the rest of the diseased bone was effected by grasping with lion forceps each lateral half thus divided, wrenching them aside, and cutting away with the Liston forceps all the tissues which appeared to be diseased. Both superior maxillæ as far as the orbital plates were thus removed, and the parts trimmed with strong scissors afterwards; the actual cautery being freely applied to all bleeding points. There was little or no hæmorrhage to speak of, and the patient rallied very soon from the operation. The operation was performed for carcinoma of the entire palate and both superior maxillæ.

HYPODERMIC INJECTIONS OF CHLOROFORM.—M. Bouchard has established by a series of experiments made upon rabbits and dogs, that subcutaneous injections of chloroform produce intense albuminuria, and finally death. A cubic centimetre produces no effect for a period varying from twenty-four to thirty-six hours, then the albuminuria supervenes. In smaller injections, ·75 c.c., only four-fifths of the animals became albuminuric. At present M. Bouchard does not explain the cause of death subsequent to the albuminuria.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.

To the Editor of the "British Journal of Dental Science."

Dear Sir,—The following facts may interest your readers.

The dentists of the Mississippi Valley have organised a Dental Journal Asociation, for the purpose of editing the *Archives of Dentistry*, a continuation of the *Missouri Dental Journal.*

The officers of the Association are :—President, W. N. Morrison; Treasurer, J. B. Newby; Secretary, J. W. Whipple. For the present an Editorial Committee will edit the *Archives.* Professor C. W. Spalding is Chairman, and Doctors H. H. Keith and W. N. Conrad completing the Committee. The plan adopted contemplates the publication of this journal simultaneously in the cities of Chicago, St. Louis, and Atlanta. This makes three independent dental journals in the United States of America.

Speaking of journals reminds me that I have *The Dental Review,* Vol. I., No. 1, dated March 15, 1884. This is another new enterprise, and proposes furnishing condensed abstracts gathered from all dental journals, American and foreign, giving the gist of articles in as few words as possible.

The eighteenth annual commencement of the Missouri Dental College was held on Wednesday, March 5th, 1884, at 7.30 p.m., in the Memorial Hall.

Prof. G. Baumgarten delivered the Valedictory Address.

Six gentlemen received the degree of Doctor of Dental Surgery. Warwick Winston, D.D.S., of the graduating class, received the S. S. White prize—an elegant set of Varney Pluggers—for the best examination in all branches.

The Dental Law, which went into effect last spring, is being enforced in some parts of the state (Missouri). The law differs from that of other states. Within ninety days atter the passage of the Act, all dentists then in practice were required to register, but after the expiration of the ninety days none but graduates were nermitted to register, thus shutting out non-graduates. Some non-graduates were foolish enough not to register within the required time, some through carelessness, others through open defiance of the law. It now looks as though somebody, or rather some nobodies may come to grief. Yours truly,

John G. Harper, D.D.S.

1203, Washington Ave, St. Louis, U.S.A. March 19, 1884.

"Omega" writes in reply to "Alpha" and offers to send him a set of sixteen papers with lists of books &c. He imposes that condition that "Alpha" should through us give proof of his desire to make progress. "Omega" very rightly remarks that such cases as that of "Alpha" deserve all the aid which the older professional never can accord. "Omega" wishes it to be understood that his acts are to be purely gratuitous.

APPOINTMENT.

Mr. J. Holland, L.D S.Eng. and Edin. has been appointed Dental Surgeon to St. John's Hospital for diseases of the skin, Leicester Square and King's Road, Chelsea, S.W.

Dr. J. Cowan, Woodburn, Bath Street, Glasgow, has been elected a corresponding member of the Institut Odontotechnique de France.

Mr. G. T. O. Crocker, Honorary Dentist to the Chorlton-on-Wedlock Dispensary.

Singular Death at Coatbridge, N.B.—We had occasion to notice in a recent issue, a death reputed to have occurred as a consequence of the extraction of a tooth. It appears, however, the report quoted from the "Scotsman," somewhat exaggerated the circumstances of the case. Pollock was under treatment for "suppurating throat," and death is believed to have been caused by suffocation consequent upon rupture of the abscess in the throat, which occurred during sleep. Dr. Tudhope, to whose courtesy we are indebted for these particulars, informs us that the tooth extraction occurred some seven or eight days antecedent to death, and is believed by that gentleman to bear no causal relation to Pollock's demise.

Large Sebaceous Cyst under the Tongue.—From the Glasgow Royal Infirmary, a case is reported by Dr. W. J Fleming, which resembles a case recently exhibited at one of the societies. The patient, a domestic servant, aged twenty, applied in May, 1882. At that time the tongue was pressed against the roof of the mouth, even when the mouth was open. The swelling was of the size of a duck's egg, and contained fluid. It was covered by mucous membrane, and appeared to be not in the tongue itself, but in the tissue between it and the floor of the mouth. A well-marked tumour was to be felt from the outside, pressing down the skin behind the chin. The case progressed rapidly until food could not be taken. When Dr. Fleming saw the girl he diagnosed the tumour to be a large ranula, and, acting upon this assumption, he snipped a portion of the wall away. Where this was done, sebum escaped up to two ounces, and revealed the true diagnosis. The sebaceous tumour was then removed in the best way possible, considering that its walls had been opened.

LETTERS RECEIVED.

Communications have been received from Messrs. H. Apperby (London), J. Holland (London), W. Grayston (Scarboro'), J. Carmichael (Barrow-in-Furness), J. Dennant (Brighton), Mellin (London), J. Manton (Wakefield), J. Maitland (Paignton), J. C. Goy (Lincoln), W. Woodburn (Glasgow), C. Truman (London), G. T. D. Crocker (Manchester), Editor Zahntechnischer Reform (Charlottenberg).

British Journal of Dental Science.

No. 391. LONDON MAY 1, 1884. Vol. XXVIII.

THE HÆMORRHAGIC DIATHESIS, ESPECIALLY IN RELATION TO DENTAL OPERATIONS. II.

By Dudley W. Buxton, M.D., B.S., M.R.C.P.

The practical use of considering the etiology and pathology of the Hæmorrhagic diathesis lies in the guide their study offers as to the best method to be adopted in treatment.

It is curious, that although women are not subject to the severe form of Hæmophilia—that in which copious spontaneous hæmorrhages occur, they nevertheless transmit the bleeding diathesis to their male offspring.

Thus a non-bleeder, a male may intermarry with a woman, coming from a family of bleeders, and their male offspring will probably be bleeders.* Bleeders may, however, have non-bleeders as their issue. The most striking point about the etiology of Hæmophilia is its hereditariness. From a number of cases collected, more than 50 per cent. came from families of bleeders; while 20 per cent. possessed a presumably healthy ancestry, and many were the progeny of parents who suffered from gout, scrofula, syphilis, or cardiac diseases.

Some German authorities lay stress upon intermarriage as a cause of hæmophilia, adducing as proof, the frequency of its occurrence among the Jews, whose rubrics foster the practice of intermarriage. In Germany, also, where marriages of the next of kin are common, this disease seems rife, but it has to be remembered, that, as noticed above, the frequency of its occurrence in Germany may be accounted for by its nature having been earlier and more thoroughly investigated there than elsewhere.

The hæmophilitic *strain*, if we may be permitted the expression, may last through at least six generations, while the likelihood of its transmission is further enhanced by the marked fertility of the female members of families of bleeders.

Among predisposing causes, we find various conditions classed, such as the time of year—autumn and spring being held more prone to produce hæmorrhages. The night time, also, while any extreme of heat or cold, coupled with humidity of the air, are all supposed, but with doubtful propriety, to provoke losses of blood,

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* See some very interesting genealogical trees in report of Hœmophilia St. Bartholomew's Hospital Reports, vol. xvii., by Dr. Wickham Legge.

It seems more reasonable to connect hæmorrhage with sudden violent psychic emotions, as well as indulgence in wine or spirits, as all these conditions cannot but effect a more or less profound alteration in the circulation, and so lay stress upon vessels already placed, we may all believe, *hors de combat* by the disease itself.

If we now turn to the pathology of hæmophilia, we find even more diversity of opinion than exists with regard to its etiology. Wickham Legge, in his exhaustive monograph, has collected together a vast amount of theoretical matter from German and other sources, and has supplemented this by his own observations, which appear in his report, to which we referred above. It must be confessed, however, that at present we are far from fathoming the *fons et origo mali* of Hæmophilia.

It has been sought to couple the symptoms—so precise, definite and unvarying in themselves—with structural changes in the vessels; with changes in the blood itself; with certain general or systemic diseases.

Schoenlein, basing his assertion on a few observations, associates Hæmophilia with Cyanosis, and describes several cases, in which the autopsies revealed deformities in the heart or great vessels. Among these may be cited a marked thinning of the walls of the heart, patent septum, etc. Blagden has also drawn attention to the marked thinning of the walls of the vessels.

Other writers have found fatty changes in the structures of the heart, but we must bear in mind that such fatty changes occur in all conditions tending towards the exsanguine.

It has been insisted upon by Virchow, quoted by Wickham Legge, that hæmophilia is closely allied with chlorosis, and that the well known narrowing of the aorta, which is found in cases of the latter disease, also exists in hæmophiles. As subsequent observers have not confirmed Virchow's views, we are bound to accept the alliance between those two conditions, as being at the best, matter of speculation only.

Dr. Percy Kidd has remarked, in a case upon which he performed a most careful autopsy, certain structural changes in the vessels. The lining cells, or endothelium had undergone so vigorous a proliferation as to choke the lumen of the smaller arteries, veins, and to obliterate the capillaries. This was the case in the vessels which supplied the mucous membrane, from which the hæmorrhage had occurred. It is further noteworthy that the *vasa vasorum*, or small vessels which supply the coats of the aorta and vena cava were seen to have a like structural change.

Dr. Kidd also observed that the muscular coats of the blood vessels were diseased, the muscular tissue having almost wholly disappeared, and being replaced by an opaque substance, the structure of which could not be made out.

More recently Wickham Legge has published cases in which, although the most careful microscopic preparations were made of the vessels and structures of the mucous membranes and skin, yet no changes at all comparable to Kidd's observations were found. But while we are bound to confess that at present there are no patent pathological lesions existing in the vessel walls themselves, yet it seems only reasonable, as Dr. Legge remarks, to attribute to a profound vital change in the vessels, the agent which opens the flood gates of the hœmophiles hæmorrhages. It is well known that the slightest vital change in the cells which forms a capillary, one which the microscopist would fail to detect unless guided by its results, will determine diapedesis.

With respect to the morbid anatomy of the joints in hæmophilia, nothing definite can be said. The vascular loops in the synovial fringes have, as far as we know, not given evidence of morbid change, but the close similarity between synovial cavities and serous cavities will readily bring them under one category—the morbid mechanism, whatever it may be, acting in the one case, would be operative in the other.

The upholders of theories which seek an origin for hœmophilism in the blood itself, cannot adduce any reliable evidence of morbid change in the blood. Chemically it shows no departure from the standard of health. There is at present no accurate observation which support the statement so often made, that the blood in these persons is unduly fluid, and defective in its coagulating power. Nasse, at the early part of the century promulgated a view, which, although resuscitated since has not been supported by the most recent workers, he held that the blood was in a condition of hyperoxydation, and that to this was to be attributed the tendency to hæmorrhage.

Some observations of Prussak would appear to take a new departure in theory. Prussak remarked that injections into the lymph sac of frogs, of a 2 per cent. solution of sodium chloride produced a strong tendency to extravasations from uninjured vessels. Wickham Legge repeated these experiments and extended his researches to the other salts of the Haloid series. He seems, however, to have produced the extravasations only when he employed chloride of sodium.

It appears probable, however, that our views upon this line of discovery may have to be reconsidered, as we become more familiar with the individual *rôles* performed by the saline constituents of the blood, both when present in physiological and pathological quantities.

(To be continued.)

REGULATION OF TEETH.

By C. W. Dunn, L.D.S., Eng. Florence.

In the month of June, last year, a lady consulted me, with regard to the left upper central incisor in her mouth. It was about a third shorter than the other teeth. It had been arrested in its growth, and although somewhat more prominent, was not much outside the line of the circle. Her teeth were very fine, well-shaped, of a good hard dense formation, tending to a yellowish tint. She was tall, well-formed, healthy, remarkably handsome, dark hair, dark eyes, and apparently about thirty-five years of age, nervous, sanguine temperament. She told me that she was annoyed at having the tooth so short, thus spoiling the appearance of her mouth, and that she had decided upon having it extracted, and replaced by an artificial tooth. She had come to ask the time it would require, as she expected shortly to have a good opportunity to afford the time for the operation as her husband would be leaving the country for some weeks.

On examining the mouth and finding nearly all the teeth present, and all in so healthy a state, it seemed to me to be a case in which it would be very desirable to lengthen the tooth rather than to extract it. Reflecting over the cases of replantation so successsully performed by my friend Dr. Caccia-guerra, of Catania, of others equally successful reported by Sig. Rebolla, of Palermo, those of Dr. Magitot, of Paris and some cases also which had occurred to me, I proposed that I should endeavour to draw the tooth down to the level of the others, to secure it at that point. When the advantages which this operation would afford were shown her, should it be successful, it was then explained very carefully that possible failure might ensue. That there might be so severe an inflammation that it would be necessary to extract the tooth; that it might become discoloured, that it might never get tight, that, after some time it might get diseased at the root and loosen, but, nevertheless, that none of these sad consequences might happen, that I did not think that any of them would happen, but thought it would prove successful, that should the worst possible thing occur it would only be necessary to do eventually what she herself had proposed to do at once, that is, to extract her tooth and put in a false one. She asked for time to reflect and left. Two or three weeks passed; I had thought no more of the matter until one day she returned. She had come to arrange when the operation could be carried out. I first took a model of her mouth, as is seen in Fig. 1. I had a vulcanite plate made, so that 1 should be able to secure the tooth in its new position. I also wedged space sufficiently that the tooth might be brought inward on a level with the others, and when all was prepared. I proceeded to act in the following manner.

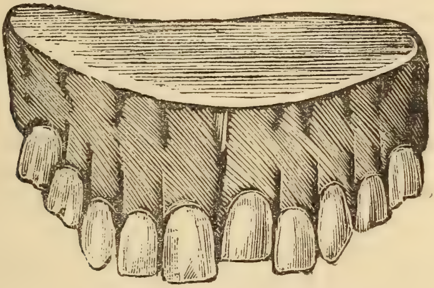

Fig. 1.

I decided to lengthen the tooth at one sitting, but to draw it down extremely slowly. I hoped by doing this to avoid breaking the nerve. I had seen the operation of stretching a nerve, carried out by Prof. Loreta of Bologna, and had observed sufficient to convince me that a nerve is very tough and will bear a long and severe strain before it breaks, if the force put upon it be not too violent or too sudden.

Remembering how often also, on account of the conical shape of its root, the front up per central incisor, is apt when an attempt at extraction is made to slip from its socket into the beaks of the forceps, I took the precaution to fill these with soft india-rubber in such a manner that while I could seize the tooth, its cutting edge would rest against the india-rubber and thus the tooth would be prevented from slipping downwards from its alveolus.

I do not know how long a time I took to draw the tooth down. It seemed to me to be a very long period for I was very careful about it and thought more of the tooth than I did of my patient. She also seemed to think it was very long; she had preferred not to take gas, or any other anæsthetic.

I brought it down a little more than into a line with the others, for I thought that in the healing of the parts there might be a contraction and consequent shortening of the tooth, which calculation proved to have been correct, I applied the plate behind the teeth and bound the lengthened tooth with a ligature through holes, which had been drilled for the purpose, thus securing it firmly in its place. I directed the patient to foment the parts with warm water several times, to avoid all meat and wine, to diet herself severely, to try to live for a few days on as little as she could, and to prepare herself to have a bad time for some days.

Four days afterwards she returned the whole face was painful, she was dark under the eyes, the face, and nose slightly swollen. In three or four days more these symptoms subsided, and the tooth was evidently on the way to tighten again. There was no discharge at the neck, nor by any pustule higher up.

In another week all the symptoms were very much improved, the tooth was firmer in its socket.

After this the progress towards recovery was rapid, at the end of a month there was no annoyance, the tooth was slightly loose, but after the lapse of another month it had become firm, on a line with the others, and not more prominent as will be seen in Fig. 2. At the end of the first month she left off wearing the plate. There was a slight irritation of the gum, but after a few applications of iodide of zinc all abnormal action ceased. The gum did not recede but remained on a level with that around the other teeth. The colour of the tooth has not altered perceptibly and now

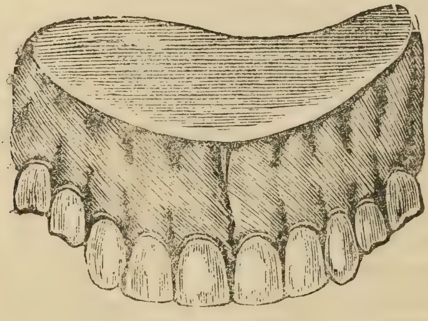

Fig. 2.

nearly ten months after the operation the case seems satisfactory and to have a prospect of continuing well for some time. Seeing that there has been no change of colour and also that there has been no irritation or pustule on the gum I trust, and believe, that the nerve was not broken but only stretched.

CHLOROFORM AND OTHER ANÆSTHETICS.

By W. Bowman Macleod.*

The subject of anæthesia, its inductors, and their relative value, is one which can never become uninteresting so long as surgery is practised as an art.

The use of anæsthetics has now become so established, and the benefits conferred by their use are so manifest and unassailable that notwithstanding an occasional fatal issue, which, although concurrent with the use of, cannot always be charged against the anæsthetic, that the question of the day is not, Should they be used? but, Which of the known agents can best serve the purposes required? viz., total abolition of pain, with the least possible risk. To us, therefore, who, though practising surgery in a limited area, require so frequently to have recourse to one or other of the anæsthetic agents in order to destroy the acute pain and succession of pains, cumulative in their intensity, which are the normal accompaniment of removing diseased teeth from their attachments, these attachments being themselves more frequently than not in a state of disease and exalted sensibility; it must not only be interesting but instructive to discuss now and again the relative advantages and danger of the different agents in common use, as well as ventilate the prospective value of agents as yet only upon their trial.

We will thus gain knowledge by the interchange of experience, and in all likelihood lessen the probabilities of an undesirable conclusion.

This, then, is my plea for introducing the topic at this meeting, and I trust that the conversation which the importance of the subject is certain to evoke, may be of benefit to the members of our Society, the profession, and to our patients.

Chloroform, ether, nitrous oxide, and alcohol, this last generally in combination with the first two, are the best known and most extensively used anæsthetics.

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*Read before the Odonto-Chirurgical Society of Scotland.

Each of them have their advocates and partizans, their denunciators and their detractors. Each of them have in the earlier stages of their existence been claimed as perfectly safe when properly used; and each of them have had in turn to acknowledge a fatality, although administered by acknowledged experts, and in circumstances which, so far as the clearest human foresight could discern, were in every respect favourable to a successful termination.

So far as our present knowledge goes, based upon published statistics, chloroform has the unfortunate distinction of being the most dangerous, ether stands next, then nitrous oxide, while the combinations of nitrous oxide and ether, nitrous oxide and ethidene di-chloride, alcohol and chloroform, and alcohol, chloroform, and ether, do not as yet present any array of statistics of sufficient extent to enable us to place them fairly in a comparative degree of safety as against the use of the single agents.

There have been many other substances used to produce anæsthesia, but the names of these I need not mention, as their introduction has been quickly followed by their abandonment.

Bi-chloride of methylene, introduced by Dr. W. B. Richardson in 1867, has of late been attracting some attention by the warm advocacy of Mr. Spencer Wells, Dr. Junker, and others, but it has been proved, what was before suspected, that the substance sold and used as bi-chloride of methylene is but an admixture of chloroform and methylic alcohol, and is now known as methylene. For this agent a great future is prognosticated by its advocates, and its career will be watched with anxious interest. In the meantime we must not be too sanguine; like all others it stands charged with fatal results, but as the substance used under that name was previously of uncertain constitution we would do wisely and justly to place the charge in abeyance until such time as a more extended trial of the standard methylene has been made.

I have lately made a summation of the number of cases in which I have operated while the patient was under the influence of anæsthesia, and I find that during the last five years anæsthetics have been administered 954 times, or during a period of practice extending to twenty years 3816 times, making a yearly average of 190·80. Of the agents used the number per annum have been—chloroform 30, nitrous oxide, or nitrous oxide and ethidene dichloride or ether 160·80. Of ether alone I have not had over 10 during the twenty years.

My experience leads me to the conclusion that for operations which can be completed within 30 or at most 60 seconds, nitrous oxide is indicated, or if preferred, nitrous oxide and ether, or ethidene dichloride. No doubt we occasionally meet with cases where the narcosis induced by nitrous oxide may endure for 90 seconds, but these cases are the exception and cannot be prognosced, and in discussing a question of relative value we must be guided to our conclusions by average cases.

In operations, therefore, which demand more time than 60 seconds for their performance, we are almost forced to choose between ether and chloroform, and when these operations are to be performed in the mouth, chloroform, notwithstanding its relatively greater danger, is to be preferred to ether, owing to the greater difficulties experienced, such as the shorter and more uncertain duration of its narcosis, the greater flow of saliva excited, the greater flow of blood which attends it, the greater liability to muscular excitement, and its admittedly greater danger to very young and very old persons.

It has been recommended by some that in dental operations which are likely to last more than one minute, such as the extraction of a number of suppurating or exostosed roots, as many as possible be extracted at one exhibition of the gas, and the sittings be repeated at intervals of a few days, until the mouth is rid of all the offending organs. But besides there being many single tooth operations which cannot be concluded during the fleeting narcosis induced by nitrous oxide, of this I am certain, that if it be possible to collect the results of 3000 cases treated in this manner, the array of unsatisfactory sequences would more than outweigh the supposed immunity from danger.

I express the opinion, with all deference to others who may differ from me, that whatever operation has to be performed is best concluded in one sitting, as the mental anxiety experienced in looking forward to a second or third sitting, is more than an ordinary mortal can endure without injury to health, general and nervous. Moreover, if not completed at one sitting, the completion of the necessary operation is often frustrated by terror, overwhelming the natural courage of the patient, and the evil we sought to remove is more firmly established, and, it may be, intensified. Therefore use nitrous oxide in every case where an anæsthetic is desired or indicated, if you are certain of completing your work before the return of consciousness; where this is improbable or impossible, use some other agent which will secure a more prolonged state of narcosis.

My experience of ether in dental operations where nitrous oxide was contra-indicated, has been somewhat limited and not at all satisfactory. I have therefore been compelled, in the interest of my patients, frequently to have recourse to chloroform, in the pure and honest belief that notwithstanding the percentage of recorded accidents concurrent with its administration, it is, when carefully used, the best and most reliable abrogator of pain which as yet we have at our disposal.

But whatever anæsthetic be used we must never lose sight of the fact that there is a lurking danger ever present, which we must be prepared to meet, and against the approach of which we must take every precaution.

(*To be continued.*)

HARDENING RUBBER IN FRENCH CHALK.

By Chas. E. White, L.D.S. R.C.S., Eng.

Having seen in this journal (November 1st, 1883) a condensed report of a paper read at the Plymouth meeting of the British Dental Association, by Mr. Brunton, on "A method of Hardening Rubber in Steatite," it occurred to me that the experiment was well worth a trial, and finding it a success I have adopted it ever since. Those who, like myself, divide their time between operating and work-room, and have not already tried Mr. Brunton's method, will do well to give it a fair trial, and they will find their time saved in every way; and it is with the hope of helping them, that I have penned this brief description of the method I have found so useful.

My first trouble, and one which nearly wrecked the venture, was the difficulty to find out where to obtain steatite, but Messrs. Ash & Sons kindly found out for me that French chalk would do for the purpose, if not actually the material meant; so that trouble removed, I started on what has proved to be a clean and easy way of making vulcanite dentures.

A duplicate model should be prepared, and before it becomes perfectly dry, liquid silex—diluted with about the same quantity of water—painted all over it, and then set aside to dry. I prefer doing this over-night, so that the model is is quite hard and dry when required: possibly it will then be found covered with a thick coating of crystals, but I do not find that these do any harm if brushed off immediately before using the model. This coating of silex prevents the steam from rising through the model, and raising the rubber from its position during the process of hardening, and it also has the advantage of leaving the under side of the work clean and free from the whiteness commonly found in cases worked on plain plaster models.

Now, cut out a pattern of the required shape, and from that a piece of Bow Spring Rubber, place this together with a few small pieces on a hot-water plate to get thoroughly warm. I have specified this particular rubber, as it is the only kind I have tried at present, but I have no doubt that others would answer equally well, provided the sheets were tolerably thick —say a little over one-sixteenth of an inch. Whilst the rubber is warming, fit the teeth, and prepare any metal fastenings that are needed. Next take the model, and paint over the parts to be covered a solution of rubber in chloroform; this will leave a coating of rubber when the chloroform has evaporated, which greatly helps to steady the work as it proceeds. Take the rubber, cut from the pattern, and press it firmly into place with the fingers; should it prove sticky, wet the fingers slightly and that difficulty will disappear. Should it happen that, in placing the rubber, any part requires shifting, it will be necessary to re-paint with the rubber solution the parts of the model that become uncovered. Mr. Balkwill in his work on Mechanical Dentistry, suggests, as a means of avoiding misplacing the pattern, that it should be doubled "over the end of the right fore-finger, and placing this on the middle of the palate, the two wings can then be brought down and gently pressed into place." The bands, or wires, should next be put in their places; to do this, take the free end in the pliers and pass them through the gas-flame once or twice, when they can be pressed into position as easily as into wax. In putting the teeth in position, slightly warm the tooth, paint a little rubber solution on the back, press a small piece of rubber well round the pins and put in place, pressing the rubber down solidly with a warm burnisher; should greater thickness be required, it can be built up with pieces of rubber, moistening the surface with the solution each time a fresh piece is put on. When this is completed, the whole may be worked into shape and smoothed with a warm knife and burnisher. Cover the surface of the rubber with tin-foil, and it is then ready for hardening.

This method of building up I have found very useful in cases where there have been natural teeth at intervals to act as supports; but, where it has been necessary to place more than three teeth side by side, I have found it better to catch the fitted teeth in their places with a little wax, the bands placed in position, and a thin wall of plaster built in front; when the plaster is set the wax may be taken away, and the work proceeded with as before.

Now, place the model with the built up case upon it, in a tin box (anyone will do, so that it easily takes the model) and fill up firmly all round and over with dry French chalk, fasten the lid on with iron wire and place in vulcanizer. I usually put about a pint and a half of water in the one I use (a Childs' Patent); taking care to keep the box containing the work well above it, and give it 70 minutes at 90lbs. pressure.

The advantages I find working this way are :—cleanliness; the hands do not get covered with melted wax, or oil, in boil-out and packing it saves time, there being no waiting for plaster to harden, except in the larger cases ; the work turns out nearly finished and is extremely light and not too brittle. For example, I give four cases I have lately made :—

Upper—from 1st. molar to 1st. molar—five teeth—three gold fastenings, weight 117 grs.

Upper—from R 1st. bicus ; to L canine—four teeth—two gold fastenings, weight 56 grs.

Upper—from R 1st. molar to L 2nd bicus—five teeth—two gold fastenings, weight 81 grs.

Lower—from R 2nd bicus to L 1st. molar—four teeth—no metal fastenings, weight 56 grs.

Each of these cases took less than 3½ hours to make, after the model was dry.

I follow the same plan to a certain extent in repairs, but as these are usually required sooner than new cases, I do not use the liquid silex and harden in plaster. After the old vulcanite is roughened and secure points for holding have been prepared, I place the case on the model, paint over with rubber solution, and work the fresh rubber well in with the burnisher, smoothing over as before described; then bury the whole in plaster, and when that is well set, place in vulcanizer, and proceed as usual. No pressure is needed.

In conclusion, I feel sure that those who try this method will, with myself, heartily thank Mr. Brunton for his suggestions.

EXTRACTION OF TEETH BY THE NUN'S METHOD.

BY DR. DAVID.

COMPARISON BETWEEN THE MILK AND PERMANENT TEETH.

At a period not far removed from the time at which they are normally shed, milk teeth have no roots left, the under lying crown of the permanent tooth having worn them away They are already loosened, and only held by some slight attachments to the gums. The loop of thread, as employed by the Nun's method, is quite sufficient to destroy these connections, together with the periosteum around the neck of the root, and to cause the fall of the tooth at the cost of a very limited and temporary inflammation of the gum; in some cases, even, it is enough to tighten the thread without even drawing upon it, for the tooth to be enucleated, and to fall out attached to the thread.

In the case of permanent teeth, on the contrary, even in those which would appear best suited for the application of this method, that is, those with conical roots, the ligature takes a long time to reach the end; besides which, it inevitably causes injury to the alveolus, which may be of a serious nature, and for this reason this method of extraction should altogether be discarded for the permanent teeth

The following cases are examples of the unfortunate termination of the ill-timed application of the Nun's process to the extraction of teeth:

Case I.—In May, 1883, a young schoolboy, aged thirteen, came to Dr. David's consulting room on a Thursday, at one of the Lycée's in Paris. He was found in the following state:—

The two upper central incisors were very widely separated, lengthened, loose, and surrounded with granulations from the gum, which covered about one-third of the crown. The only thing done that day was to cauterize the granulations with a heated spatula.

The next day the child, whose pain had not ceased, was again brought. It was now found that the child had been undergoing treatment (regulation) for the purpose of bringing the two central incisors together. As soon as this result had been obtained by means of a suitable apparatus, the Dentist had surrounded the two teeth with an india-rubber ring so as to keep them together.

The diagnosis was made at once, notwithstanding the mother's statement that she had removed the ring (*one* ring) at the time ordered.

She was very sorry to have done this, for, according to her, the teeth had only become separated and loosened, because they had not been kept fixed long enough. The india-rubber had been applied eighteen days before and was removed on the tenth.

On searching beneath the granulation from the gum, with with a small hook, a red india-rubber ring was found and removed, which was round the root of the left incisor. None could be found on the right.

The fungous granulations were touched with the electric cautery.

On the Saturday the child was still suffering a good deal from the right incisor; the other was a good deal better. A careful exploration under the gum, along the deeply denuded root, brought to light another india-rubber ring. It was now hoped that the right incisor would become reconsolidated

On the Sunday morning the young patient returned with his right tooth hanging out and not adhering to anything. All that had to be done was to pick it out. With it also appeared another india-rubber ring, but this was the last. The left tooth had become reconsolidated, but remained denuded for a distance of three or four millimetres above the neck.

The Dentist had evidently in this case applied three india-rubber rings. In all probability he had placed them over the two teeth; but one only could have remained, the one the mother had removed. The two others must have become displaced either by the mother or child and had gone or making their way to the very end of the roots. In any case this application resulted in the total loss of one middle incisor and an extensive denudation of its neighbour.

Case II.—Some time in February, 1880, Dr. David saw among his private patients a young girl of twelve, who was brought to have a tooth removed. On asking to be shown the tooth, the upper left first permanent bicuspid was pointed out very much loosened and just on the point of coming away by itself. To what cause could this loosening be due? A fortnight before a woman who called herself a dentist, had been going the rounds of Versailles and had operated in the school where our young patient was. She had mistaken this one for a milk tooth and had tied it fast as she had done so many others. All had fallen out as she had predicted, either two, three, or four days after she left. This one alone had resisted, and no wonder, for it was not a milk tooth, with a short truncated root.

The very first day the child had a great swelling of the face which only began to go down very slowly towards the eighth day.

As the child was in constant pain, and this tooth would not come away, the family was advised to take the child to a Dentist.

Dr. David found the tooth very loose, surrounded with large prominent granulations from the gum by which it was nearly covered and bathed in pus. On passing a probe down the root, he found it was entirely denuded (fifteenth day after the application of the thread).

There was no thread round the root. It only came out of the socket after a good deal of syringing; it was a thick silk thread, well tied and partially decomposed.

There was also found some necrosis of the bottom of the alveolus. It subsequently transpired that about a month after the operation the child had lost a sequestrum of the size of a cherry stone.

To sum up, this method of extraction acts in two different ways:

1. By mechanically separating the root of the tooth from its attachments to the socket and gums.

2. By exciting inflammation of the alveolar dental periosteum, the first effect of which is to cause loosening of the organ, and the final one, death of the periosteum, the result being the loss of the attachments of the tooth and its spontaneous fall.

The first process is the one which occurs almost exclusively when this method is applied to milk teeth. In such cases, there is but a very slight amount, or no periostitis at all, on account of the shortness of the roots. What remains of the dental periosteum adheres only to the neighbouring gingival ring; this the ligature easily separates, and ulcerates through without causing any further inflammation than that of the free border of the gum, and without affecting the alveolus. Children, who are always frightened at the sight of the ordinary instruments used for extracting, readily submit to this process; it is painless; and, besides this, it can be carried out by anyone.

Without giving a full description of this method, Dr. David thinks a few words of advice may be useful. A hempen thread of a certain thickness, and not twisted, appears the most convenient form of ligature. It must be applied to the neck of the tooth, great care being taken to get it beyond the spur of the crown so that it may not slip, and it must be tied very tightly, care being taken not to make a large knot, which might prevent its slipping.

The ligature, is to be preferred to the india-rubber ring, which is not always at hand, which is introduced between adjoining teeth with great difficulty, which does not keep in position, as it is pushed back by the gum, and which thus very easily falls off unless the crown of the tooth is very large.

In the case of permanent teeth, no one is advised to use this method of extraction on account of the inflammatory accidents which it may give rise to. The various kinds of ligatures, the india-rubber rings, should only be applied in certain cases of regulation, and even on these care must be taken lest they lead to receding of the gum even when they are attached not to one tooth, but at the very least to two.

DEGENERACY OF DENTAL TISSUE AND THE DIETARY INFLUENCE OF SILICATED PHOSPHATES.

By RICHARD OWEN, Esq., Wolverhampton.

(*Continued from p.* 345.)

Our education system should be revised. We teach our children the geography of some remote parts of the world, in which they may never have the slightest interest during their whole life; but the geography of their own habitation, in which their direct interest is centred, they are not taught at all, or very meagrely indeed; surely this ought not to be, and should not be allowed to continue. It is not enough for the higher cultured ones to have the privilege of knowledge in plain physiological truths; but the plainest education ought to ensure it. Physical life demands knowledge of its laws, and I hope our educational directors will add this to their code ere long. During the last few years, education has made rapid strides, and, in passing, let me remark, that degeneracy of dental tissue is, in some measure, due to the long hours devoted, in childhood and early youth, to mental culture; and especially in girls after fourteen years of age; depressing physical vitality, and thereby causing mal-assimilation and its allied consequences, vitiated saliva; and also, in my opinion, to the exhaustion of the brain and nervous system generally, in attaining high culture, not being replenished by regenerating phosphates in food. Educational reformers should insist upon individual capacity being recognised more, and not endeavour to cram weak intellects equally with the robust: as, however desirable it may be to advance in high mental culture, the health and physical life of youth demands equal attention. Embryonic conditions demand our most careful attention. Departure from hygienic laws from ignorance, no doubt, of the first principles of normal fœtal development, is a common cause of much evil and puerile production. I would have every woman entering wedlock know herself—it is not enough to depend upon traditional knowledge. A thorough acquaintance with the physiological aspect of procreative law is an absolute necessity. Unhappily we cannot all have our habitation in the "City of Hygieia," with its noble and scientific founder for our tutor, or a better state of things would speedily be produced.

Here is a grand field for the noble band of women who are at work in our midst, "The Ladies Sanitary and Physiological Associations," who, I believe, are doing their work well.

It has always appeared to me, an enigma, that the expounders of Holy Writ have never taught the people the elaborate code of sanitation laws, which were given for the preservation of "The chosen people of God." Knowledge of sanitation laws has been neglected for generations, until scientific research has propounded its importance, and to-day we are indebted to men of science for the light we are blessed with, when, to my mind, we are simply acknowledging that we are of the same human family, and our lives must be preserved by the same laws, so succinctly laid down for us ages ago.

Now, Mr. President and Gentlemen, let me lead you to consider some pointed questions on the subject of embryonic difficulties; the first is, in embryoal development, does it depend upon the physical condition of the woman?

2ndly. Do women, as a rule, lose their teeth during gestation and lactation, more than at any other time? And,

3rdly. Can we improve that condition by special food elements?

First then, undoubtedly, in intra-uterine development, very much depends upon the health and general physique of the woman; and, if she rightly understands her position, very great blessings to posterity are mainly in her own hands. What wailing and sorrow for the loss of the little folk would be spared the human family could this be fully recognised, as it ought to be.

2ndly. It is, I believe, universally admitted by medical men, and certainly is my experience in practice, that women do degenerate in their dental tissue in embryonic development.

I have no doubt but that most dental practitioners hear the same thing from their married patients, "that they lose a tooth with every child." This we can fully comprehend is due, in a large measure, to the mineral constituents of ordinary food being insufficient for fœtal development; and, unless compensatory elements are supplied, depreciation of dental tissue must take place.

I believe we shall all agree with Dr. Norman Kingsley, when he, in a paper read at the International Congress, says, "The teeth require as much constant nutrition as the muscles, the bones, or any other organs, or tissue of the system—The vitality of well-organized tooth structure, in a healthy body, is quite sufficient to counteract the effects of any active external agents which might be temporarily present; but when nutrition is insufficient or diverted, the resisting power of its vitality inadequate, and destructive agents present, the teeth will yield at their weakest points and caries will result." Dyspepsia, also, contributes largely to this end—free acid beng present in the saliva, in very many cases of uterine dyspeipsia, causing rapid decalcification.

(*To be continued.*)

COMPARATIVE DENTAL PATHOLOGY.

By John Bland Sutton,

Lectnrer on Comparative Anatomy, &c., Middlesex Hospital Medical School.

(*Continued from page* 358.)

In the teeth of the cachalots the formation of the dentine proceeds so very fast that even when quite small they have already very thick walls, presenting only a very small cavity for the pulp, at the point of the root, in the shape of a very low cone. But the contrary is the case with the Orcas; their teeth are characterised by a surprisingly slow ossification, a circumstance which often produces in them a peculiar morbid condition, excited by friction. The conical teeth in the upper and lower jaws are very regularly fitted in between each other, so that in general they are not easily exposed to any friction at these points—at least, not at the beginning. But having such a considerable breadth, and being placed close to one another, the inevitable consequence is that they become worn on the lateral surfaces. Even in very young teeth we find an elongated concave friction mark on one of the sides: in the upper jaw most commonly on the anterior and external sides of the teeth, but on the lower jaw in the posterior and internal sides. The more excavated this worn surface becomes, the deeper of course the teeth of the two jaws will be wedged in between each other. Soon most of the teeth are worn by both of the opposite ones. The worn surfaces meet each other at the point, which is completely worn off, and the original conical teeth, with their decidedly pointed, if not very sharp ends, are now changed into flat and obtuse teeth. As in all other real—that is to say, enamelled—crowns of teeth, the portion once worn off is not compensated for by a growing out of the root of the tooth, and in old specimens all the crowns of the teeth may be found worn down to the very gums. This wearing off does not generally take place until the formation of the dentine in the crowns has been completed, or until the crowns of the teeth are perfectly ossified. But it not unfrequently happens otherwise, and then the wear penetrates both the enamel and the still thin layer of dentine, so that the pulp is exposed and dies away, and the formation of the dentine is not only stopped in the crown, but also in the root, which is never closed, and the whole tooth remains hollow from the worn surface down to the point of the root. Nevertheless, such decayed teeth do not fall out.

In 1873 Mr. Chas. Tomes (17) reported a case of this nature to the Odontological Society. The specimen in question was a grampus (*Orca gladiator*), now in the Oxford University Museum. Mr. Tomes gives rather a different explanation to that advanced by Eschricht. In the Oxford specimen, Mr. Tomes supposes that the regular interdigitation of the upper and lower teeth had by some cause been interfered with, so that all the teeth on the right side of the mouth met point to point. As a result of this, the wear on their apices was greatly increased—so greatly that the wearing down of the crown has exposed the pulp cavity before it could become obliterated by progressive calcification.

From an examination of the skeleton, Mr. Tomes was unable to discover the cause of this disturbance in the relation of the teeth, and the displacement was so slight that it could not be distinctly made out when the skeleton was cleaned. It must be admitted that this explanation is not quite so satisfactory as that of Eschricht, whose acquaintance with whales was so intimate; but it is well to find that the two observers agree in the main point, viz., that the disease was due to exposure of the pulp cavity before the pulp had time to calcify, the wear being in excess of the formative power of the pulp.

The Middlesex Hospital Museum has a specimen of this nature, showing in a curious way all stages of this condition. In some of the anterior teeth, the pulp cavity is almost obliterated by calcification. The middle ones are deeply worn by friction, whilst the posterior teeth have lost their crowns, and the pulp chamber is widely open.

Alveolar Abscess is very frequent in young animals; many cases have come under my notice, and its results are more disastrous than in human beings. Death, the result of an alveolar abscess is, I should imagine, a thing unheard of in man; not so with animals. The first case which I examined was in a young chimpanzee; on exposing the lungs some patches of pneumonia were observed, resembling in all respects these patches one is accustomed to see in patients dying from malignant disease of the tongue or pharynx, due to the inspiration of morbid material. On examining the mouth, an abscess cavity was found connected with a carious tooth and a necrosed portion of the jaw. The course of events must have been this:—Pus collected giving rise to an abscess; this burst by a sinuous or narrow opening; during sleep the discharges would collect in the animal's mouth, and be drawn into the trachea during inspiration, thus giving rise to septic pneumonia. To show that this explanation has a sound basis, it will be well to mention that this cause of death has been traced in several deer, particularly in a long-standing case which occured in a specimen of Swinhoe's water deer (*Hydropotes inermis*).

Other examples were met with in a chimpanzee, a common rhesus monkey, and my last example was from a rattel. This mode of death happened to a very fine specimen of kangaroo. In this instance the abscess was caused by necrosis of the hyoid bone, and the sinus leading to the abscess cavity opened in the glosso-epiglottidean folds. Septic pneumonia was set up by pus dribbling into the larynx, that fact being well established at the autopsy by finding pus in the trachea and bronchi, even to some of the consolidated patches.

In this series of dental diseases it is desirable to place on record a case in illustration of the dangers incurred in attempting to palliate the sufferings of some of the brute creation.

It concerns the now famous African elephant Jumbo. It is well known that this animal possessed only two stunted remains of tusks, and that they projected through the skin of the cheek. Some years ago, in a fit of passion, the elephant broke the tusks short off within their aveoli; the opening in the tissue closed, concealing the stumps from view. As time rolled on, it became obvious that an abscess had formed in the neighbourhood of the stumps. This increased in size, the elephant became thin, and was evidently in great pain, refusing food. It was clear to all concerned that unless the abscess burst or was opened, the elephant must die. Mr. Bartlett determined to make an attempt to puncture the abscess. He made a lance and fitted a handle to it, then mounted the gallery in the elephant's house, and tempting it with dainties, made a thrust with the spear, but, unfortunately, only succeeded in cutting three parts through the animal's hide, and of course failed to open the abscess. All attempts to entice Jumbo again to the gallery were unavailing. Still the animal grew gradually worse; something must be done. Mr. Bartlett now determined to meet the brute on level ground. He had an instrument constructed of iron, 3 feet length, one end of which was curved something like a crook, the other end had a rope attached. With this instrument concealed in his sleeve Mr. Bartlett and the keeper approached the elephant, and whilst stroking his cheek, adroitly slipped the curved end of the lance into the hole in the cheek made at the previous attack, then suddenly hanging on to the end of the instrument, opened the abscess, and they were instantly in the midst of a perfect deluge of pus and blood. The elephant turned tail, much to their relief; they were well aware that he would do one of two things; either retreat. or *kill* them The elephant, sensible of the relief he had obtained allowed the abscess cavity to be washed out, and when an abscess formed on the opposite cheek, allowed that to be *opened* without resistance. Through the apertures thus formed his tusks appeared: this explains why they pierced his cheeks instead of appearing from under the lips, as is usual.

It would be very difficult to find a more noble example of true bravery than this. Mr. Bartlett knew full well the danger he ran. Yet the sense of duty, and the wish to relieve the suffering animal, stimulated him to risk his life to give ease to and save the life of Jumbo.

(To be continued.)

ANOTHER DANGER WITH ANÆSTHETICS.—Dr. Blalock, writing to the "Cosmos," tells the following "strange story:" "Some time ago a lady, accompanied by her husband, came into my office to have a number of teeth extracted. As she desired to take gas, I carefully examined the teeth and roots to be removed, and administered the anæsthetic. After removing eight or ten teeth without the slightest pain, or even movement on her part, I patiently waited for her to regain consciousness, when, just as I held her head over the spittoon, judge of my surprise to see a number of pins hanging down to the clotted blood and saliva. I asked her where they came from. She laughed and said: 'Oh, I had them under my tongue and at the sides of my cheeks.' Her husband cried out in language more forcible than eloquent: 'I told her those pins would be the death of her yet. She actually sleeps all night with them in her mouth."

British Journal of Dental Science.

LONDON, MAY 1, 1884.

LAW AND DENTISTRY.

At all times it is a deplorable circumstance when a practitioner and his patient cannot manage to arrange their transactions without the arbitration of the law. At the best it is but a bad and unprofitable business and seldom or never redounds to the credit of any one implicated or even unwillingly drawn into its damaging vortex. At times possibly it is inevitable, but in the greater number of cases, a little more tact, a little more mutual forbearance, a little less misunderstanding of each others intentions and wishes, and such unseemly exhibitions need never result. Where on the one side a distinct undertaking is made and honestly carried out and on the other side it is as distinctly understood, and the efforts to carry it out are aided and appreciated, there can be little need of legal action.

A somewhat detailed report of one of these unhappy differences is given on page . With the merits of the case we have nothing whatever to do, nor have we any special sympathy with either party concerned, but the remarks of the Judge certainly merit the approval of all who fully understand the difficulty of adjusting artificial dentures. That the patient is entitled to fair and reasonable skill and comfort, none can gainsay, but that the practitioner is equally entitled to fair aid, consideration, and the necessary attention of his patient to assist him in attaining that mutually desirable termination of his labours is equally unquestionable; and on these points the judgment was lucid, just and unassailable, but whether it was equally judicious that a medical gentleman should be called to depose to the scientific merits or demerits of an essentially dental dispute is far from certain, and the nature of the evidence is calculated to cause diverse opinions on this point of the question at issue.

Bogus Diplomas.—We are informed that Wilmington the so-called "College" of which is being traded as a bogus diploma mart, does not as a matter of fact possess any College. We trust this statement may help to expose the infamous imposture of bogus diplomas.

General Medical Council.—The proceedings of the recent session have an especial interest for the members of the Dental profession.

Two names have been erased from the Dental Register, which had previously been removed from the Medical Register, on account of misconduct. This establishes the principle that erasure from the Medical Register is sufficient ground for erasure from the Dental Register.

In the next place attention was drawn, by Dr. Storrar, to the unfairness of the charge made against the Dental Fund, in respect of salaries, rent, etc. The Dental registration tion is only one-sixth the strength of the Medical, and yet the charge made is one-fourth. At the motion of Dr. Storrar, the charge was definitely fixed for the future at one sixth. The fairness of this goes without the saying: it only remains for us to wonder why such an apportionment was not effected before.

Nausea.—It may not be generally known that in very many cases nausea can be completely overcome by so simple a plan as sprinkling cold water over the face. Dr. Douglas, of Fenton, found that in retching and attempts at vomiting, which occur during the administration of ether, this simple procedure—dashing cold water over the face will check the vomiting. The modus operandi is probably that the fifth pair of nerves are brought into play and reflexly inhibit the vomiting centre.

"We Live in an Age of Progress."—A correspondent of the "Independent Practitioner" narrates an example of the strides education (? *sic*) is making "across the pond." A little girl between twelve and fourteen was submitted to him. Having done all he had to do, he was thus interrogated by the little lady, "Doctor, have I such teeth as Bacteria readily devour?" What a blessing that little girl will prove when she grows up!

Paraldehyd as a Hypnotic.—If it has not yet become as general as it ought to be, it is on account of that appearing in the markets not being pure. It produces, according to Dr. Joseph Peroble, taken in doses from three to six grains, a several hours' sleep, without any excitement or threatening symptons, like an even, deep, natural sleep. Compared with chloral hydrate, it has the following advantages—harmless to the heart even in great doses, the speedy coming on of sleep without excitement or appearances of congestion, and the absence of diagreeable sensations upon awaking.

Elastic Temporary Teeth.—There is no doubt that such teeth are adapted for suction, and that even in bad work they will set well, because the palate plate is made of yielding material. Such a set of teeth cannot have the stability of those made from hard caoutchouc. The greatest cleanliness is necessary to enable it to be worn for some months, as it is apt to decompose in the mouth. A bad smell and decay are the consequences, followed by disturbance of the digestion and general health. Every dentist may call his teeth elastic, whether made of hard or soft caoutchouc. The use of soft caoutchouc is not forbidden by the patent, but if he places on the palate side a thin leaf of hard caoutchouc, he has only made use of an old method, and if he scrapes his plate very thin, he obtains the same result as if he had paid a large sum of money for a patent.

Influence of Pregnancy on Dental Caries.—According to Dr. Dogajew, the caries common amongst pregnant women cannot be attributed to absorption of lime salts from the teeth to supply the drain from the body. The absorption of lime salts goes on in connection with the development of the granular tissue as in normal development, in carious processes during the elongation of those teeth which have lost their antagonists, and during resorption in old age. In investigating 870 teeth, taken from pregnant women, Dogajew detected no deviation from the other diseases of the teeth. He found absorption always took place from the outer to the inner layers. The teeth of children contain less lime salts than do those of adults, and yet disease is certainly not more common among the former. He believes the secreting processes are at fault, and lays especial stress upon the importance of the preservation of the enamel. The disturbances occurring in secretion during pregnancy are ample to account for the frequency of caries among the pregnant.

Death under Chloroform.—This occurrence is reported from the Royal Portsmouth, Portsea and Gosport Hospital.

Walter Humby, æt 44, was under treatment for papilloma of the tongue. It was decided to remove a portion of that organ, with which intent chloroform was administered by a Skinner's inhaler. The flannel was replenished three times in six minutes, then general pallor supervened, and the pulse changed. In a few seconds respirations and pulse stopped. In spite of artificial respiration and other means which were adopted, the patient did not recover. No mention is made of an autopsy—the death is stated to have been put down to syncope.

DENTAL DIPLOMAS IN GERMAN PRACTICE.—A Dentist may practice in Cermany without a diploma but is restricted in the use of a title. A dental student has to go before a medical Commission and be examined; if approved he can practise dentistry. The law says "If any person shall call himself a Zahnartz (Dentist) who has not been approved, he is liable to fine and imprisonment." The dentist may register his name before a magistrate, and then practice. But an inconsistency exists, as Dr. Bishop, of Hanover, pointed out—for although the magistrate calls you a dentist, and you are taxed as a dentist, yet, if you call yourself an American dentist, *i.e.*, *not* a German Zahnartz, you are liable to be fined, because you have not been approved in Germany. Those who have not gone before the Commission, practice dentistry, but don't call themselves "Dentists." The Americans are "Doctors."

CARBONATE OF SODA AS AN ANTISEPTIC.—Dr. Kirk has found the normal carbonate of soda thus ($Na_2\ S\ O_4$) very useful as a napplication to bicuspids and molars containing putrescent pulps and which are clogged with *debris* of food. The cavity having been washed with water as hot as can be borne, has all the soft and carious dentine removed with sharp excavators. The opening into the pulp chamber is, if necessary enlarged and again washed with hot water The canals are next carefully dried with bibulous paper. The Sodium Carbonate in coarse powder is then introduced into the pulp chamber and is sealed with a temporary stopping—Dr. Kirk employs Fowler's.—After two or three days the patient returns and then the stopping is removed, and the chamber is thoroughly cleansed with hot water. The roots and cavity are then prepared and filled finally.

For acute odontalgia ensuing upon pulpitis without exposure, Dr. Kirk believes soda crystals most useful.

HOW TO AVOID SALIVARY INCRUSTRATIONS ON DENTAL PLATES.—The usual methods pursued are mechanical, but these fail, besides wasting time and scratching the plates. A method has recently been proposed based upon the fact that saliva is alkaline, and the deposit consists of the salts of potash, soda and calcium. The plate is to be immersed in carbolic, acid, from 3 to 5 per cent., before going to bed. Sulpho carbolates are formed, and being soluble are easily detached. The plate may be left in the solution all night as carbolic acid is both an antiseptic, a deodorant and does not act prejudicially upon the substance of which the plates are made.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the Publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against one another. All makers, vendors, and inventors, ore invited, with strict impartialisy, to contribute towards this end.

AUTOMATIC VULCANIZER GAS REGULATOR.

Mr. H. C. Braun has patented a very simple automatic gas regulating thermometer to control the gas supply for the vulcanizer. It consists of a thermometer to be placed in the thermometer-tube of a vulcanizer—in which a little mercury has been placed—having a large mercury bulb and column into the upper end of which slides a smaller glass tube, which can be adjusted, through a cork, to any desired height above the column of mercury; the gas from the main passes down this smaller tube into the mercury tube, and out by a side union to the burner. When the vulcanizing heat is reached, the column of mercury has risen until it has so nearly reached the lower end of the inner or gas tube that it reduces the supply to that needed to keep the required temperature; should the heat from any cause rise, the mercury would do so too, and cut the gas off altogether, and when this reduced the heat, the mercury would fall, and so again admit the gas which a "bye-pass" jet—arranged for the purpose—would ignite immediately. The little ingenious apparatus is exceedingly simple, and with a few feet flexible of tubing, can be readily used with any vulcanizer.

IMPROVED PEDESTAL SPITTOON.

Mr. Ritche has introduced an entirely new pedestal spittoon in polished walnut wood (veneered). It has a handsome appearance, measuring thirty-two inches in height, the lower square plinth with moulding at its top is twelve inches square, the pillar column nine inches square with bead mouldings on each of its sides, and the top again twelve inches square. It is fitted with a nickel-plated spittoon basin—nine inch—and takes a receiver twenty inches deep by seven in diameter, having a capacity of several gallons. We understand the sizes of the basins can be varied if required.

Abstracts of Foreign Journals.

THE DENTAL PRACTITIONER *March*).

"Nicotism," by Elton R. Smilie, M.D.

Dr. Smilie is not favourably disposed towards tobacco smoking; he says, "Of all deleterious habits to which a man has subjected himself, the use of tobacco is the worst."

In San Francisco, children commence to smoke and chew tobacco at 5 years old.

2500 children were examined who suffered from contracted ill-formed jaws, with obstructed, troublesome, second dentition.

950 were of German parentage, the parents being heavy smokers.

830 were Irish, also inveterate smokers.

215 Russians, Sclavonians, Hungarians, and Italians.

412 English, Scotch, and French.

93 Spanish.

The deformity is believed to result from tobacco poisoning, although it is admitted poisoning with alcohol is usually present at the same time, one habit engendering the other.

Two influences in particular are at work in modifying the hereditary transmission of deformed contracted jaws (1) inter mixture by marriage with broad-jawed races—i.e. races less removed from carnivorous humans, (2) the practice of chewing the quid, which, by keeping the masticatory muscles at work, aid growth and development.

In children who commenced smoking at five a constant flow of saliva exists. There is general functional lethargy, nausea and general stunting in development.

In some of these children the second dentition was vicious, the mucous membrane of the mouth became insensitive, the muscles of the face paralytic from extreme relaxation, leading to an idiotic expression.

In some who chewed as well as smoked, although the local effects were more marked, the deformity was less.

THE AMERICAN JOURNAL OF DENTAL SCIENCE (*Feb.*)

"The Conservative Treatment of the Pulp," James G. Palmer, D.D.S.

The writer traces the development of the "embryo" tooth, and describes briefly the structure of a tooth; he then says, "If, then, the papilla could build up the dentine and if in after years it still has the dentine, it certainly has the power of building up new material."

He believes that "under favourable circumstances it (secondary dentine) will be formed from the pulp."

Hence the importance of conservative treatment and capping the pulp.

If the general health be good, mere protection will enable the pulp to regenerate; if the general health be amiss it will be necessary for it to be placed on a better footing to enable the pulp to exercise its regenerative functions.

The cavity being carefully cleansed, all debris of tooth substance removed, the condition of the pulp must be ascertained. If no inflammation be present it may be stimulated. If any congestion or inflammation exists, lead water, aconite, and iodine, are said to be useful. In severe inflammations, counter irritations and internal remedies are useful.

When all has quieted down, oil of cloves, creosote, carbolic acid, chloroform, aconite, etc., are useful.

The method the writer prefers is to dress the exposed pulp after cleansing, with glycerine and arnica, or glycerine and celendula. Then mix oxide of zinc with carbolic acid to a paste and apply to the pulp over a large surface of the cavity. All excess of liquid is to be absorbed. The cavity is then to be filled with a plastic, all pressure upon the pulp being avoided. This filling is to be worn for four or five weeks. Then the filling being removed the cavity is again carefully cleansed, and a velvety layer of granulations will be seen over the pulp. The same dressing should be again applied, or, if sufficient hardening has occurred a non-conducting permanent filling may be used.

The results, however, are various. The pulp may die, if so, the death is painless. But little change may at first be noticed.

The advantages of a conservative over a radical treatment are:—

The tooth is preserved, its vital connexions are not tampered with; the healthy, lifelike lustre of the tooth is preserved; it enables the tooth more readily to resist decay or fracture; it wards off the occurrence of abscesses.

INDEPENDENT PRACTITIONER.

"Iodoform in Dental Surgery," by F. C. W. Bodecker, D.D.S., M.D.S., New York.

The discovery of Iodoform is due to Serullas in 1822. It evaporates at ordinary temperatures, and in solution becomes decomposed, yielding iodine. This decomposition occurs especially in the presence of sunlight. Hence, iodoform should be kept in the dark. The odour is more or less covered by the oils of peppermint, wintergreen, or cumarina (extract from tonga bean).

Iodoform is strongly antiseptic, feebly anæsthetic. Hogyes and Niemeyer says, "Iodoform when applied to wounds is first dissolved in the fats present in the tissue from which free iodine is gradually liberated."

Behring finds that after 14 days when mixed with starch no free iodine can be liberated, even when alkalies or acids are added. Heat, electricity, and powerful oxidizers do, however, free iodine. The same applies to iodoform in contact with blood; serum, connective tissue, laudable pus do not decompose it. Iodoform turns the red corpuscles of the blood scarlet red, but kills the white corpuscles. It also checks diapedesis (Binz). How the liberated iodine acts is doubtful. All the members of the haloid group—chlorine, bromine, and iodine have a strong affinity for hydrogen; hence by combining with the hydrogen of the water present in the tissues, free oxygen may be originated, which in its nascent condition checks septic processes.

Schede, Czerny, Langstein and Oberlander have recorded cases of iodoform poisoning; but in all of these very large doses—out of all proportion to those employed in dentistry—were used.

Schede describes six different forms of iodoform poisoning: the commoner phenomena are elevation of temperature (104° F.), with but little general disturbance.

In other cases there is depression, loss of appetite, constant taste of iodoform, small quick pulse. These symptoms rapidly disappear when the iodoform is dropped.

In other cases only a very rapid pulse (150-180) is noted.

In a fourth set of cases both pulse and temperature are affected—simulating septicæmia.

In a fifth class, head symptoms predominate, resembling those of meningitis.

Hoeffman recommends the crystals instead of the powder, believing their application to be safer.

Dittel, out of 2,000 patients treated annually, has never met with serious symptoms. Several surgeons are quoted upon the subject of iodoform poisoning, the concensus of opinion seems to show that quantities less than dr. i., or dr. ij. are innocuous.

In dental practice iodoform is useful in chronic pulpitis, a capping for exposed pulps, a dressing in oral surgery. It acts as a prophylactic against acute alveolar abscess. In teeth in which the pulp is dead, when the chamber is opened, air is apt to enter and set up a condition of things ending in acute alveolar abscess. To avoid this the following treatment is commended:

A hole is drilled into the tooth or filling towards the pulp-chamber until it is nearly reached. This hole is to be filled with a saturated solution of iodoform in ether (dr. j. to the oz. j). Then before the ether has evaporated, the chamber is to be pierced. The cavity is then filled loosely with a pledget of cotton wool, soaked in iodoformed ether and sealed. After three or five days the pledget is removed, all superfluous dentine removed, and the chamber and root canals carefully cleaned. The rubber dam is applied, and the cavity dried. If any inaccessible curved canals are present, such as in buccal roots of upper molars, and first bicuspids etc, one or two drops of aqueous solution of chloride of zinc (gr. 40 to oz. j.) the cavity being temporarily sealed with gutta percha and vitax for 24 hours. Then before removing the plug, the rubber dam is applied to avoid the introduction of saliva; and the temporary filling having been removed, the cavity is dried with absolute alcohol, and wiped out with solution of iodoform in ether. The pulp canals are now cleaned and again washed with alcohol. The canals being thoroughly dried have the iodoform solution pumped in, and the cavities filled.

For filling, the method advised is as follows:—Add 3 drms. of powdered iodoform to 3 oz. of rather thin solution of gutta percha in chloroform. One or two drops are to be introduced into the pulp chamber and forced to the apex with a smooth broach. Then thin pieces of previously warmed gutta percha are forced into the pulp canal until it is filled. If the foramen at the end of the root be large, a piece of cotton, saturated in the iodoform solution is dipped (after the ether has evaporated) into gutta percha, it is forced into the canal, and the pieces of warmed gutta percha introduced above it.

If the opening in the end of the root is as large as the canal, a shoulder is made as near to the apex as possible, by enlarging the pulp canal. The length of the tooth is obtained by a thin Donaldson's nerve bristle, on the end of which is a fine hook; a few cotton fibres are wrapped around this about as far from the hook end as the tooth is thought to be long, This is passed into the pulp cavity, the hook taking hold of the apex of the root. The cotton being adjusted in exact length with the cutting edge of the tooth, the instrument is withdrawn, and the length of the tooth marked upon a thin budshaped or round burr, which is then employed to enlarge the pulp canal up to one sixty-fourth of an inch from the end of the root. The root is then filled as indicated above.

Then follow statistics with abstracts of cases. Of 231 pulpless teeth, 77 were in one of the stages of alveolor abscess. Sixteen were followed by alveolar abcess; of these seven yielded to treatment, and had to be extracted.

Since July, 1881, the author has capped 133 exposed pulps, 97 with iodoform, 36 with 5 per cent. or 10 per cent. of carbolic acid, with oxide of zinc, succeeded by Wright's carbolic acid cement:—

Acid Carbol.	5 parts
Alcohol absol.	2 ,,
Aq. Destill.	40 ,,
Glycerin.	20 ,,

Mix, add equal part chloride of zinc, and obtain requisite consistence with oxide of zinc, over which oxy-phosphate or gutta percha is placed. Of these 103 cases, there were 13 failures.

FOR CAPPING.

Dr. Bodecker used iodoform in three ways :—

(1) As a paste.

R.	
Iodoform pulv.	
Kaolin pulv.	a.a. 4·00
Acid carbol. cryst. . . .	0 50

Mix: add glycerine enough to make a paste, then add ol. menth. pip. gtt. x.

(2) Iodoform powder with oil of Eucalyptus.

(3) Iodoform powder rubbed up with vaseline.

A Useful Way of Extracting Broken Down Roots.—When these are decayed below the edge of the alveolus, writes B.F.H. in the "Dental Cosmos," such as would indicate the use of the screw, to obviate crushing under the use of the elevator or forceps, a simple method will suffice. The cavity of the root is to be cleansed as for filling, good retaining points are to be obtained. Then it is to be filled with the hardest amalgam and left to harden. When thoroughly hardened the mass is so united that extraction by ordinary means becomes easy.

Coated Tongues.—The fur coating the tongue in the morning will, if examined under the microscope, be found to consist of swarms of bacteria, spiral vegetable fibres, cheese mould, starch grains, muscle fibre, scales; stamens and other parts of flowers, limbs of insects, etc. This interesting collection of course exists in the "hidden places" of the teeth. Another cause for preaching dental cleanliness and hygiene!

Literary Notices and Selections.

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

BY J. WILLIAM WHITE, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

(Continued from p. 372.)

The different forms of dental erosion can be divided into natural groups, according as they affect the face or the free edge or grinding surface of the tooth. The first group consists of eroisms affecting the face of the tooth. Several types offer themselves here. It will be necessary to recognise at least four, viz.: First, erosions "*en capule*" (in little cups); second, erosions "*en facettes*" (in facets); third, erosions "*en sillon*" (in grooves or furrows); fourth, erosions "*en nappe*" (on the surface). Let us as briefly as possible examine into each of these varieties.

First, *erosion en capule* (in little cups), the most simple of all the varieties and one of the most common, consists in small excavations or cups in the surface of the crown. To speak merely of the extreme types, between which are found all the intermediate ones possible, we find these cups now very small and punctiform, comparable to the slight depression which would be left by the point of a pin in soft wax; now larger, and at the same time deeper, consisting of a true excavation, rounded, concave, and analogous in appearance to the impression of the *head* of a pin in wax. The erosions *en cupule* are always very easily distinguished. They force themselves upon the observer by a double characteristic: First, by irregularity of surface, the excavations of which strike the eye. Second, by characteristic colour. Except in the very young, where they are still white, they contrast with the normal colour of the tooth by a darker tint, greyish or of a dirty grey; sometimes even brownish, indeed, almost black. When we study them carefully, or, better still, when we have the opportunity to submit teeth thus affected to a microscopical examination, we recognize that the lesion consists of a depression more or less deep in the dental substance. If the cupule is superficial, its bottom is still covered with a thin layer of enamel. But if it is deeper, the enamel is wanting, and the bottom of the cavity is hollowed out of the substance of the dentine. These cup-like erosions affect all the teeth. But they are more common on the incisors—notably the superior centrals. They vary in number; we may find one or many on one tooth. When several exist, they may be scattered without order, but more commonly they are arranged in a row on a horizontal line. They may be seen (but this is a very rare exception) forming two horizontal lines, one above the other.

Second, *erosion en facettes* (in facets) is a form not so common. Like the preceding, it may be met with in the different teeth, but it affects especially the incisors. Suppose that one had filed flat and at several points the anterior surface of an incisor; this surface, in place of its normal curve, would present a series of small planes, forming what we term facets. Such is about the appearance of the dental malformation in question. The tooth eroded in facets presents a surface with irregularities such as would be produced by a file or cut with a plane. One would imagine it had scaled off in places, as if a fragment had been broken from it. At first this lesion may escape observation, as it most frequently does, which accounts for the slight notice taken of it up to the present time. It can be thoroughly examined only with the aid of a magnifying-glass, first taking the precaution to dry the tooth. Without this precaution the brightness of the moist enamel often renders inappreciable the extremely superficial irregularities of the dental surface.

Third, *erosion en sillon* (in grooves or furrows), a variety designated by M. Parrot as the furrowed-like or sulciform dental atrophy, is the most common form, and consists of a linear excavation in the crown of the tooth in the shape of a transverse groove. This groove is sometimes continuous, in which case it makes the entire circuit of the tooth, like a ring; and it is often interrupted,—that is to say, formed of segments or sections which separate the healthy portions. It may even consist of a finely punctated line. That which is most important to specify is, that the groove presents itself in two forms. In the first it is linear and superficial, that is to say, it consists simply of a streak traced on the tooth much like the mark left by a pen on paper, or the groove produced by the passage of the point of a penknife on a piece of wood. The sight distinguishes this streak without conveying the idea of a depression, but the finger-nail placed on the tooth recognizes a slight furrow. In the second form we have to do with a regular *gutter*, deeper and wider than the preceding—a true furrow in the substance of the tooth, from half a millimeter to a millemeter or more in depth. One would say that the tooth had been filed, scratched, or scraped with an instrument, or corroded by an acid. The layer of enamel is partly gone, and it may so happen that the denuded dentine forms the bottom of the furrow.* Of these two forms, the first is not easily seen without attentive examination ; the second produces an unsightly deformity, which strikes the eye at first sight, because the furrow soon acquires a dark tint which contrasts strongly with the white colour of the neighbouring surface. No matter to which variety it belongs, the furrow preserves one unchangeable characteristic, namely, a rigorously *horizontal* direction, the cause of which we shall understand in studying the pathogeny of the lesion. Commonly *erosion en sillon* consists of a singlefurrow, presenting the characteristics I have just described. But there are instances of a different kind, where, in place of a single furrow, we find two or three on the same tooth. These multiiple furrows occupy the portion of the crown nearest to the free edge of the tooth. They are placed one above the other horizontally, like parallel lines, and are separated from one another by a band of enamel which forms a slight border between them. It was to teeth affected in this manner that long ago the significant names of "stair-like teeth," "step-like teeth," were given. Finally, let us remark that in such teeth the free extremity, which constitutes the last step, is generally worn thin, partially or totally deprived of enamel, and is rough, uneven, irregular, and brownish. It crumbles and wears rapidly, so that even in youth, or later in adult life, the tooth is shortened and deprived of its free extremity, as if it had been filed horizontally. These different varieties of erosion may affect all classes of teeth, but they are most frequently found on the incisors.

Fourth, *erosion en nappe* (surface erosion) is a rare form. It consists simply of an exaggerated form of the preceding ones. Imagine one of the erosions we have just described, increased in every way, tending to cover a large surface of the crown, and you will have the present type. The tooth affected in this manner is absolutely altered in appearance. It presents a wide, unequal, and rough zone, filled with alternating points and sinuosities, and is of a dirty yellow or blackish gray color. Still more, magnify this pathological condition in extent of the lesions ; imagine it general—that is to say, affecting the entire surface of the tooth – and you will then realize the monstrous type of tooth produced—completely disorganized and unrecognizable as a tooth. This is what Tomes has termed the honeycombed tooth; without doubt on account of the numerous anfractuosities presented, and which have been compared to the alveoli of a honeycomb.

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* It may be remarked that, even at the level of the edges of the furrow. the layer of enamel sometimes causes a slight relief, in the form of a collar, This relief increases by so much the apparent depth of the furrow.

A second group of the so-called surface erosions affects the free edge of the tooth. The malformations which compose this group present themselves under absolutely different forms, according as they affect different classes of teeth. It is necessary then, to examine them separately on the molars, the cuspids, and the incisors.

(*To be continued.*)

TRISMUS NASCENTIUM.

By P. F. Hartigan, M.D., Washington.

(*Continued from p.* 360.)

In the "Annales Méd. de la Flandre Occidentale," 1857, Contenot observes: "Since Bajou wrote on the subject, two-thirds of the infant slaves in Cayenne died in the first days of their existence; M. Boireau also refers to it being frequent and fatal in the French Antilles, and that inflammation of umbilicus is always present. Those attacked at Cayenne before the ninth day are abandoned or left to die." In a case of recovery, reported by him, the umbilicus was healthy. The anatomical lesions he calls an apoplexy of the spinal centre, which is only a terminal consequence of the tetanic disease, and he thinks the case related would have been incurable from the instant a hæmorrhagic condition would be realised. After discussing the various causes, he is inclined to the cold theory.

Dr. Thore ("Archiv. Gén. de Méd.," vol. viii., 1845) gives an account of an autopsy as follows: "A bed of bloody fluid and coagula lined entire extent of spinal canal, outside the dura mater; no trace in spinal arachnoid. Nothing abnormal in brain or membranes; congestion posteriorly of lungs." West says: "The most frequent post-mortem appearance consists of effusion of blood into the cellular tissue surrounding the theca of the cord." "Dr. Goelis, of Vienna, frequently found an appearance of *increased vascularity* in the substance of, and in the membranes enveloping, the upper part of the spinal marrow. The same has been observed by Dr. Thomson, of Philadelphia." ("Curling," p. 109.) M. Billard ("Stewart's ed.," p. 490), after remarking that he had only witnessed two instances of the disease, both of which proved fatal, observes he "found on dissection, *nothing more than an effusion of a quantity of* *coagulated blood in the spine.*" Bouchet, Continot, Matuszynski, Gaynard, and Barillier say that the congestion and hæmorrhage found in dissections are an effect, not the cause of the disease.

In a post-mortem examination in the practice of Dr. Baldwin, he "found the umbilicus enlarged, hardened, and a portion of the surface, to which the cord was attached, dry and red. Membranes and substance of the brain natural. *A thick and very firm coagulum found covering the posterior and lateral surfaces of the medulla spinalis*, extending the whole length of the spinal column. Other organs normal." Bednar saw no constant lesion of the navel in the cases he observed.

Dr. Hester, of New Orleans, says: "It seems to be produced by the action of an unhealthy atmosphere upon extremely delicate and nervous systems." Sir Charles Bell remarks: "In the West Indies it is produced from exposure to the night air, and most probably from exhalation from the ground."

Dr. Joseph Clarke ("Trans. Royal Irish Academy," 1789) says that up to the end of 1782, of 17,650 infants born in his institution, 2,944 died within the first two weeks, or nearly every sixth child, 19 out of every 20 being from nine-day fits. As the disease had hitherto yielded to no remedy, he directed his attention to its prevention rather than cure. In the old hospital, which preceded the one he refers to, and in a less airy part of Dublin, of 3,746 births, only 241 died within the first month, or 1 to 15½. During a period of five or six years in the British Lying-in Hospital, out of 3,611 born, no less than 146 died, or 1 to 25; while in the London Lying-in Hospital, he was positively assured that the death of an infant was a rare occurrence; from which he thought the uncommon mortality of children in the Dublin Lying-in Hospital satisfactorily proved, and therefore ventured to "hazard the following conjectures on the causes of mortality, viz., foul air, uncleanliness, irregularity in the manner of living of their mothers, more especially in the abuse of spirituous liquors." In adopting his mode of ventilation, he also reduced the number of beds in the wards, with the most favourable results. Of 8,033 children subsequently born, only 419 died in the hospital, or 1 in about 19$\frac{1}{3}$.

To be continued.

To Remove one Tooth out of a Section.—An American writer says that a diamond disk on the hand-piece of a dental engine, will cut out clearly and quickly any one tooth out of a section.

Dental News.

ILLINOIS STATE DENTAL SOCIETY.

The twentieth annual meeting of the Illinois State Dental Society will be held in the Senate Chamber, Springfield, commencing Tuesday, May 13th, 1884, and continuing four days. Programme:—Subjects: I. Exposed dental pulps and their treatment; S. F. Duncan, Wilmington; discussion opened by J. N. Crouse, Chicago. II.—Reflex pain; K. C. Moody, Mendota; discussion opened by T. L. Gilmer, Quincy.—III. Origin of the defective tooth structure known as pitted, furrowed, or cribiform enamel; W. H. Eames, St. Louis, Mo.; discussion opened by L. C. Ingersoll, Keokuk. IV.—Inflammation; Homer Judd, Alton; discussion opened by W. B. Woodward, Peoria. V.—Chemistry; William H. Taggart, Freeport; discussion opened by E. S. Talbot, Chicago.—VI Dental education, past, present and future; A. H Fuller, St. Louis, Mo.; discussion opened by Geo. H. Cushing, Chicago. VII.—Dental-embryonal histology; Will X. Sudduth, Bloomington; discussion opened by A. W. Harlan, Chicago. VIII.—Some applications of electrolysis in dentistry; W. B. Ames, Chicago; discussion opened by T. W. Brophy, Chicago. IX.—Irregularities in human teeth, treatment and cause; J. J. R. Patrick, Belleville; discussion opened by W. N. Morrison, St. Louis. X.—Life as a force; G. V. Black, Jacksonville; discussion opened by J. Taft, Cincinnati. XI | .Illinois State Dental Society—What has it accomplished? C. R. E. Koch, Chicago; discussion opened by C. A. Kitchen, Rockford. To these may be added several interesting demonstrations.

Annual General Meeting of the British Dental Association.—This meeting is to take place at Edinburgh, Aug. 29th and 30th, under the presidency of John Smith, Esq., M.D., F.R.C.S. Ed. Gentlemen wishing to read papers, exhibit specimens, or give demonstrations, are requested to communicate with the honorary secretary, Frederick Canton, Esq., 40, Leicester Square, as soon as possible, in order to facilitate the arrangements of the meeting.

Dental Benevolent Fund.—A meeting of the Committee is announced to take place at 2.30 p.m., Saturday, May 3rd, at the offices of the Association, 40, Leicester Square.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

The next meeting of the Society will be held at the rooms, 40, Leicester Square, on Monday, May 5, at 8 p.m. Casual communications by Messrs. Stour Bennett, E. G. Betts, J. H. Mummery. Paper by Mr. E. G. Betts, "Observation on the Teeth of certain Rodents."

J. H. MUMMERY,
DAVID HEPBURN,
Hon. Secs.

APPOINTMENTS.

Mr. W. B. Paterson, M.R.C.S., L.D.S., has been appointed Medical Tutor at the Dental Hospital, Leicester Square

Mr. Alverstone Gabell, L.D.S.I., has been appointed Honorary Dentist to the Earlswood Asylum.

Mr. C. A. Clifford-Batten, L.S.D., has been appointed Dentist Surgeon to the Kidderminster Infirmary.

VACANCY.

The post of anæsthetist to the National Dental Hospital is vacant. Applications, with testimonials, to be made to the Secretary of the hospital, 149, Great Portland Street, W., on or before Friday, the 10th of May.

ERRATUM.

Page 577. "He understood from persons who had studied the subject, that there were six membranes of the *oatmeal*." This should be *wheat* and not oatmeal.

ACTION AGAINST A DENTIST.

At the Newcastle-under-Tyne County Court on the 8th inst., an action of interest to the dental profession was tried before Mr. T. H. Jordan, judge. Jessie Bott, wife of a joiner, at Burslem, sued Mr. G. H. Pickburn, a dentist practising at Newcastle, to recover £10 damages for injuries which she was alleged to have received through the defendant's negligence as a dental surgeon in and about a certain operation; also for damage to the plaintiff, by reason of the wrongful act of the defendant in supplying the plaintiff with a partial set of teeth upon a plate of inferior metal to that bargained for and agreed to be supplied, whereby the plaintiff was seriously injured, suffered great pain, and was put to considerable inconvenience and expense. Mr. Richardson (barrister) appeared for the plaintiff, and Mr. James defended. Mr. Richardson in opening the case said that the facts were simple and he thought the judge would say after hearing the evidence that the damages were by no means excessive, but on the other hand fell short of compensating his client for the expense, directly or indirectly which she had been put to, and the pain she had suffered. In May, 1883, Mrs. Bott was wearing a plate of vulcanite with two artificial teeth upon it, and requiring another artificial tooth she communicated with the defendant, afterwards calling at his place and seeing a person who represented himself as his assistant and who professed to have been an assistant of Dr. Crapper, dentist, of Hanley, but who was in fact formerly employed by Dr. Crapper as groom or stable boy. Mrs. Bott saw this person who said he could do as well as Mr. Pickburn, and acting on his advice she allowed him to break off a tooth, in doing which he splintered it, causing much inflammatory action, and then pulled another tooth in a way utterly irregular and improper. Subsequently she saw another dentist who found that the plate and teeth supplied by the defendant did not fit the corrugations in the palate, and the metal forming the plate being of inferior quality to that agreed for. The defendants' prices were per tooth on silver plate 5s.; on "inferior" platinum, 7s. 6d.; and on "best platinum," 10s., though he (the learned counsel) always that thought platinum was platinum, and that there could be no distinction. The price agreed upon was 10s. per tooth, and the plate supplied was upon a substance known as "dental alloy" of inferior quality, which was never used by first-class surgeon dentists but by persons who must be unscrupulous or ignorant, because it was impossible to use it without oxydization of the silver in the alloy, which tended to injurious results. Under the defendant's treatment the client suffered considerable pain, and was afterwards advised to consult Dr. Crapper.

Mrs. Bott, the plaintiff, stated in May 1883 she was wearing two artificial teeth on a plate of vulcanite, and another tooth being partly broken she communicated with the defendant for the purpose of having another tooth supplied. In

July she called at his place of business, and the assistant who said he could do quite as well as Mr. Pickburn put some liquid on some wool in a tooth, and took an impression of her mouth. When she went to have the teeth fitted in Mr. Pickburn said that they were not quite ready as they had had a mishap, and that his assistant had not told him that he had broken off a tooth. (When she first went the assistant took away part of a tooth.) The defendant filed away part of this tooth, and she waited until night until he put them in. They did not fit easily, and she complained that they showed the stumps of the teeth, and said, "This will never do; I am not satisfied," but the defendant said, "But I am." She asked him to stop a tooth which the defendant had promised to do for nothing. He put some liquid upon wool in the tooth and told her to call again. She felt a hot, burning pain, and when she arrived home her mouth and tongue were swollen.—The Judge said this was his experience after an operation by one of the most skilful surgeon dentists in Manchester.—The Plaintiff (continuing) said, that the swelling extended to the tongue, side of the mouth, and lips. She consulted Mr. Taylor who gave her a lotion, and by his advice she saw Dr. Crapper, of Hanley, and Mr. Small. She showed Mr. Small the teeth the defendant had supplied her, and he made her another set. Between the time Mr. Pickburn supplied the teeth and of her going to Dr. Crapper, she went to the defendant many times, and during that period she suffered great pain. The defendant's assistant made some alterations in the plate. At Dr Crapper's she had removed some small pieces of teeth from the gum and the stopping from the tooth, which was afterwards refilled, and it became very much easier.—The Judge, requesting that the scientific evidence should be called, Mr. J. M. Taylor, M.R.C.S., of Burslem, stated that Mrs. Bott called upon him on the 3rd of August last, suffering from inflammation of the mouth, lips, and tongue. It was, evidently, due to some irritant, such as creosote or carbolic acid, and from her condition he should say that it had been carelessly applied. No doubt she was caused considerable pain, and she could not articulate plainly.—By the Judge: Creosote and carbolic acid was used by the best dentists to destroy the nerve of the tooth, and sometimes when administered by the most careful men caused pain and swelling.—The Judge: The state of the tooth and gum, and the temperament of the patient, causes great difference in that respect?—Witness: Yes. Mr. David Mann Small, L.D.S., in practice with Dr. Crapper, of the White House, Hanley, said that the plaintiff consulted him in January last with regard to her mouth. He found her mouth in a state of great inflammation, which was caused by a plate of three artificial teeth not fitting properly. The teeth created an undue pressure on the stumps left in, impinging principally on one part, instead of being adapted to the whole of the palate. On the right side there was a tooth which was broken off and fractured, It was done unskilfully. The pieces were keeping up an inflammation of the gum. On the left side there was a tooth which had been filled, and on examination he found an amalgam filling on an exposed pulp, and after drawing the tooth twice, refilled it permanently. It would have been impossible for the plaintiff to have worn the plate the defendant had made, which was of common dental alloy, gilded over. The corrugation on the new plate, supplied by Mr. Pickburn, ought to have been the same as on the former one, and the new one could not have been worn with comfort because of the oxide of silver, which would come to the surface, and cause irritation. By applying carbolic acid, or creosote with great care, it could be done without inflaming the mouth, or blistering the lips. It was now usual to apply arsenical powder, using creosote or carbolic acid as an escharotic and to allay pain, but not to destroy the pulp.—By the Judge: It was not necessary that a plate should by continual wearing adapt itself to the mouth. He had had occasionally to make alterations in plates, but the patients had not come to see him frequently.—By Mr. Richardson; An impression taken of the mouth, with proper care, would be a reflex of the mouth, and it could be reproduced in the plate. The plate Mrs. Bott was supplied with, was not a reflex of her mouth, and and could not adapt itself. She could not wear it with comfort.—The defendant was then called, and stated that he was a dental surgeon, a member of the Pharmaceutical Society of Great Britain, and a licentiate of midwifery of Dublin. He was registered a dental surgeon by virtue of having practiced as such for upwards of 15 years. For two years he had practised exclusively as a dental surgeon, and previous to that he practiced in conjunction with a chemist's business. Mrs. Bott called upon him in August, and had had three teeth upon a plate of dental alloy, for which she paid 30s.—The Judge: Is it a proper metal to put teeth on? Witness: It is. I have used it for many years, and never before had complaints of it being unfit for the purpose. The condition of the plate produced was caused by nitric acid, to which it had been subjected. He produced an artificial plate he was then wearing of the same metal. His assistant came to him from Mr. Whitfield, of Hanley, and he had given satisfaction to him and his customers. In the stopping of teeth he used iodoform, arsenical paste, encalyptus oil,together with creosote and carbolic acid. He used what he considered necessary in particular cases, and according to the state of the patient's teeth.——The Judge : Is it a common thing to use this metal in plates? Answer: It is of daily occurrence. The Judge: Did she make any complaint to you? Answer: None whatever.—The Judge: In making a plate for anybody's mouth, is it, or is it not a common thing for the plate to be brought back for alterations in consequence of not fitting well? Answer: Oh yes.—The Judge: Did you alter this plate as a matter of fact? Answer: Yes.—Cross-examined: His qualifications entitled him to practice in dentistry as L.D.S. He acquired them by long practice before the passing of the Act. It was by the advice of Dr. Brady that he took the L.M., because the doctor regarded it as more than that of L.D.S. *He went to London four years ago to learn mechanical dentistry,* such as taking impressions, modelling, and the manufacture of artificial teeth. Question: Four years ago you were a pupil?—Answer: So far as the mechanical part goes.—Question: Will the plate you made fit Mrs. Bott? Answer: I can make it fit her.—Question: Did it ever fit her?—Answer: It will fit her after a time when the palate is used to it.—Question: How many times did she come to see you?—Answer: I cannot say, perhaps six times.—The Judge: Did the plaintiff ever complain about the plate?—Answer: Not a word.—The Judge said he had made up his mind in this case. Here was an action brought against a professional man who was upon the register as being a qualified dental practitioner, and various complaints were made against him, but substantially the complaint really was that he had made a set of three teeth upon a plate of improper metal, and that he did his work negligently and carelessly and so caused damage to the plaintiff. Now it lay with the plaintiff to satisfy him that the defendant was guilty of negligence, and did not exercise ordinary skill and care. The evidence was a little peculiar, and before he heard defendant he was not satisfied that the plaintiff had made out a case of negligence or want of skill against the defendant, because everybody knew who had had any experience in these matters, that they might go to the best dentist and pay the largest fee, and then find that a plate did not fit, so that they might have to go to the same dentist half a dozen times,and have alterations made until the plate became perfectly used to the mouth, and filled the purpose for which it was intended. In this case the plaintiff does not pay the highest price, the fee not exceeding 30s. The defendant made the teeth, and was ready and willing to make any alterations which she desired, but she gets into the hands of another dentist, and has another set made at a higher price. Had the defendant then been guilty of negligence? In his opinion from the evidence, he had been guilty of nothing of the kind, and if people were to bring actions against dentists, because they have to go back again and again to have the plate adjusted, he thought there would be a plentiful crop of actions. He considered that there was no ground for the action, and the verdict would be for the defendant with costs.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.

To the Editor of the "British Journal of Dental Science."

Sir,—Can any of your readers give me information upon the following subject. Is a legally qualified English Dental Surgeon, entitled to prescribe for his patients any external or internal pharmaceutical remedies, which he may deem necessary to cure the disease of their teeth or gums? This question is affirmatively answered in Prussia, and also I believe throughout Germany. It would be matter of interest if your readers in different parts of the world would inform their brethren how this matter stands in European countries in general. In the Grand Duchy of Luxembourg, no special laws exist which regulate the practice of dentistry; Dentists have to submit to a theoretical examination (in Anatomy, Pathology, &c.), before the Medical College. This body the recommends the candidate for admission, and the Minister of Public Instruction then confers the degree. There would be much interest also in learning the *status* of the dentist in different countries. Do the medical profession at large value scientific Odontology as much as their own art, and consider it rightly as a branch of the medical art? The administrative physicians on the other hand, are very zealous of their prerogative, and spare no effort to depreciate dentists. The President of the so-called Medical College, has for instance, declared publicly that dental surgery is a purely mechanical art requring only manual and manipulative dexterity. This is, however, not the opinion of the scientific section of society, as is proved by the fact that the members of the "Institute" have recently done me the honour of electing me a member of their body. I am, &c.,

Luxembourg. J. Weber, L.D.S., Glasgow.

To the Editor of the "British Journal of Dental Science."

Sir,—Practitioners should be very much obliged to Mr. Gilbert Walker for his very able and *practical* paper in your issue of March 1st last.

It is so far interesting and at the same time correct, that I am induced to take the opportunity of corroborating his statements as to the value of forceps of the particular shape and for the purpose to which he refers.

It may seem rather strange, but sometime ago I had made the same discovery as to the value of, and assistance to the operator of forceps which upon pressure allowed the tooth to slip into them, and I had a pair of forceps made in this town by Messrs. Ellis and Parramote to my own idea, but they differed from those described by Mr. Walker, in that the blades were somewhat wider and I fancy thicker (viz. stronger) than his, but the principle of the angle was much the same.

This pair of forceps, curious to say, came to grief late one night whilst employed in grasping a molar in the jaw of a grinder's apprentice, and owing I believe to faulty annealing, one of the blades broke right off; however I was so impressed with the importance of this particular shape, that I immediately sent the old forceps to Messrs. Maw and Sons of London, who made for me a pair of the exact shape.

I may in conclusion just add that I can also endorse what Mr. Walker says about the general all-round extracting value of this shaped instrument. I am, &c.,

April 18th, 1884. A Constant Reader.

To the Editor of the "British Journal of Dental Science."

Sir,—Having carefully read, marked, and inwardly digested the reports of the proceedings at the recent meetings of my professional brethren in the Metropolis of the Midlands as published in your columns and those of your Contemporaries, I became somewhat interested in the suddenly awakened activity; and although they had held three meetings in a little over as many months, it appeared more than probable to those outsiders like myself, that the life and energy exhibited on each of the occasions mentioned would languish and die for want of nurture and nourishment—for it is an acknowledged fact among those of experience in public life, that public activity soon relapses in public apathy if not cultivated and moulded at the proper time, and it is more difficult to awaken public interest a second time after it has suffered a relapse.

Consequently, I wondered why the representatives of the British Dental Association did not cultivate and nurture the movement, and provide for a want which had unmistakeably asserted its right to being suitably and adequately provided for. Instead of making this provision they simply endeavoured by a direct negative to crush and suffocate the power which was proved to exist in a latent form. Had the representatives of the B. D. A. been wise they would have held out the hand of good fellowship to the promoters of this movement, and lost no opportunity of securing another child to the not over numerous family. Instead of doing this I find that at the first meeting, September 12th, 1883, by a majority of nine votes to five, they decided against a local branch; the arguments used being that the local contingent was not sufficiently numerous, but they must join the Midland Branch, so called, with its head quarters in the Northern Counties This meeting was called by Messrs. Sims and Huxley, and the chair was occupied by Mr. Waite of Liverpool, the self-styled apostle of Dental Reform, and the majority was composed of Messrs. Roff King (of Shrewsbury), Mr. Appleby King (of Worcester), Mr. H. Blandy (of Nottingham), and Mr. F. Richardson (of Derby), the first named being president, and the others members of the Council of the Midland Branch of the B. D. A.; and it was at this meeting that an amendment was proposed that a local branch of the B. D. A. should be formed with Birmingham for its centre, and still these gentlemen opposed it, and carried their own resolution, out-voting the local men. Then again, at the meeting held in January, why did Messrs. Sims and Huxley formulate opposition against a local society? It would certainly have been wiser had they instead of merely negativing the resolution, suggested the formation of a Branch. Anyway the opportunity is gone: a Society is formed, and seeing in your Journal an invitation to all who were eligible for membership to attend the Inaugural Meeting, I thought I would avail myself of the opportunity and see what sort of a meeting it would be, and the class of men taking part in it. Accordingly, I booked to Birmingham on Thursday, April 3rd, and arrived there about half-past six, just in time to get some refreshment and get to the Medical Institute at seven, the time announced for the meeting to commence. At seven o'clock I arrived at the building, somewhat awed by its grandeur, and on entering the portals I was received by the hall porter, and after depositing with him my overcoat and umbrella, I was conducted into a splendid apartment serving as a lecture hall and library. Here was seated on a raised dais, the President, Vice-President, Treasurer, and other officers, and near were seated about thirty individuals—members and friends, a goodly gathering for an Inaugural Meeting.

The preliminary business having been completed, the President proceeded to deliver his address in a masterly and eloquent manner, which at once proved him to be an orator of no mean order.

This occupied half-an-hour, when a vote of thanks was accorded him, on the motion of Mr. Adams Parker, seconded by a well-known surgeon—Mr. Sampson Gamgee, who it appeared had been a life-long friend of the President and a chum at college; this was followed by an excellent paper, written by Mr. Richard Owen, but read by that gentleman's son Mr. Harry Owen, on "Degeneracy of dental tissue and the dietary influence of silicated phosphates," which provoked a fair amount of discussion, particulars of which no doubt were taken note of by your reporter. Dr. J. S. Crapper read a paper on "Dental Irregularities and Mode of Treatment," and votes of thanks to these gentlemen, together with the exhibition of specimens of continuous gum work and a large numbers of Dental Adnormalities, brought a most successful meeting to a close,—that is so far as science was concerned. I was then courteously invited to another room, in which was provided a goodly supply of light refreshments in the shape of sandwiches, cakes, bread and butter, biscuits, tea, coffee, &c., afterwards cigarettes were handed round and we had nearly an hour's conversation, making and improving acquaintances and talking anything one pleased. A few minutes after ten, I left to catch my train home, and I felt pleased with my journey; pleased at the reception accorded me; and thought that there could be but little doubt that those there knew well what they required, and there could be but less doubt about their energy and ability to provide for those requirements, for they were evidently well versed in the conduct of public business.

I am, &c., AN OUTSIDER.

To Correspondents.

Post-office Orders to be made payable at the Langham Place Hotel Office, to G. E. Skliros, 82, Mortimer Street, Regent Street, W. A single number sent on receipt of seven (penny) stamps.

1. Communications intended for insertion in the ensuing number must be forwarded to the Editor, at the Offices, 82, Mortimer Street, Regent Street, London, W., by the 8th and 23rd of the month, and must be duly authenticated by the name and address of the writer.
2. We cannot undertake to return communications unless the necessary postage stamps are forwarded.
3. It is earnestly requested of our correspondents that their communications be written on on side of the sheet only; and we also beg to call particular attention to the importance of a carefully-penned signature and address.

BOOKS AND PAPERS RECEIVED.

' Journal of British Dental Association," "Dental Cosmos," "Progress Dentaire," "Chemist and Druggist," "Pharmaceutical Journal and Transactions," "Lancet," "Medical Journal," "Medical Gazette," "Independent Practictioner," "Dental Practictioner." "Illinois State Journal of Dental Science," "Reoue Odontologiquie," Reoue Odontologiquie de Bruxelles," "Transactions of the American Dental Association," L'Odontologie," "New England Journal of Dentistry," Transactions of the Illinois State Dental Society." "Report of Dental Hospital of Exeter," "Glasgow Medical Journal." Annual announcement of "College of Dental Surgery," Michigan "El Progreso Dental. Announcement of College of Dentistry, University of California," "Dental Record."

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THE HÆMORRHAGIC DIATHESIS, ESPECIALLY IN RELATION TO DENTAL OPERATIONS, III.

By Dudley W. Buxton, M.D., B.S., M.R.C.P.

(*Continued from page* 392.)

We may next glance at other views about the pathogenesis of hæmophilia.

The prominence of hæmorrhage as a symptom of Leucocythemia has led many to associate hæmophilism with splenic disease. If we, however, exclude this one symptom, viz. the tendency to hœmorrhage, they possess in common, we fail to discover any tie or relationship between them. The same remark applies to the views which have been advanced to explain hæmophilism by associating with it gout, scrofula, and syphilis as possible antecedents.

And lastly, we must mention several theories which connect hæmophilia with nervous lesions. It would subserve no useful purpose to more than thus hint at these theories, ingenious though they be, they must lie outside the pale of likelihood until pathological facts can be brought forward in their support, and until the pathological tendencies of the sympathetic system of veneration is more accurately known. Suffice it to say that in most of these theories the sympathetic system of nerves or vaso-motor system is held to play the prominent part.

It must be admitted that, at present, none of the views brought forward are based upon any facts, or sufficient number of observations to make one readily adopt them as a substantial explanation.

The question of Treatment now confronts us. We have to combat, perhaps, no sudden gush of blood, but an insidious constant flow.

Among the earlier plans recommended we find, "bleeding from a vein to syncope." This method, not likely to meet with favour now-a-days, owed its origin to a mistaken view taken of the pathogenesis of hæmophilia—the blood, it was said, is lacking in power of coagulating, it is a lack which we can overcome by bleeding, since the blood after heavy losses of blood coagulates readily.

Deligation of arteries has been practised. Brodie tied the carotid artery for the hæmorrhage, which following the extraction of a tooth in a bleeder, and which had resisted all other methods of treatment. The patient, however, died. Although the result was not favorable in this case, other cases are on record in which recovery ensued upon deligation of an artery. The manifestly increased danger to the sufferer incidental to any cutting operation, save as a *dernier ressort,* must tend to discountenance any operative measures of this nature.

For small wounds, such as leech bites, etc., pressure and styptics may be used, but pressure is itself liable to produce ecchymoses, manifested by the most extensive bruises. When operative measures are deemed absolutely unavoidable, the suggestion of Mr. Marshall must be borne in mind, and in all cases in which it is possible, the electric cautery should be employed.

In such operations as come within the province of the dentist, hæmorrhage is peculiarly liable to occur.

It need hardly be said, that no tooth should be extracted without the gravest consideration, and until the gravity of the danger is brought home to the patient, or then, indeed, unless ample preparation has been made to prosecute to the utmost the treatment to be indicated below.

In some cases merely plugging the alveolus with pluggets of absorbent wool will suffice. If this measure fail, the alveolus should be systematical packed with morsels of wool soaked in the perchloride of iron, oil of turpentine, tincture of matico, etc.

In applying these remedies patience must be exercised, and each styptic allowed time to act. Paquelin's benzine cautery may succeed should packing fail, and especially if the point be bent to an angle, so as to allow of its introduction well into the socket.

In other cases, a ready apparatus always at hand—the tooth just extracted—may be used with advantage, by replanting the tooth, and fixing it in position with adequate pressure. The plan which recommends itself most forcibly, however, is that of having in constant readiness a set, or better series of sets of tooth-like plugs, constructed of some elastic but firm material, and so fashioned as readily to be adapted into any cavity left in an alveolus after extracting a tooth. These plugs would be efficiently maintained in position by an interdental plate.

Among drugs which have met with approval, although we fear out of all proportion to their intrinsic merit, we may mention chlorate of potash, *penghawar Djambi*, recommended by Cantani (quoted by Wickham Legge), the perchloride, and other astringent preparations of iron; the whole class of watery purgatives, ergotine, sclerotic acid, &c.

In treating the exsanguine condition of the patient we have but one remedy, but one happily, which on more than occasion has proved successful—and that is, transfusion of whipped blood.

There can be be no question, we think, that transfusion should be practised in these cases, and if need be, repeated again and again, since cases are on record in which patients apparently moribund after the first transfusion, have been restored to life by a second introduction of blood.

It has been the object of this sketch to attempt rather a warning than to offer fresh research upon the subject, and to systematise and suggest lines of treatment, rather than to increase the already too ample stock of theory under which the subject of hæmophilia groans.

When it is considered that any dentist may, at any moment, be brought face to face with a contingency which taxes the skill and courage of the pure surgeon, it can hardly be said that the subject is one which needs an apology, or deals with matters outside the beaten track of Dentistry.

A word of warning on the point of diagnosis may not be out of place in concluding the present paper. We must all guard ourselves against the not very uncommon error into which even experts fall, of putting down all hæmorrhages which show a tendency to recur, and are with difficulty checked to hæmophilism.

There are very many pathological conditions, it may be merely transitory, which make the sufferer at all events for a time, to all intents and purposes, a hæmophile.

The vicarious hæmorrhages common amongst plethoric women whose menstrual molimen falls short of its normal function, may be accepted as an example of what we may term pseudo-hæmophilism. We have had several of such cases, and although the bleeding was alarming from its persistence, yet it yielded never to recur when the natural channels were again established for the physiological discharge.

Here the sex, of course aids us—true hæmophilism not occurring among women.

Again in weakly children, whether themselves the subject of

Purpura or in that state which seems to hover upon the borders of Purpura, although the petechiæ may be absent, we have met with cases in which the extraction of a tooth has been followed by a loss of blood far beyond the necessity of the case, and certainly beyond the amount such a child could afford. Physicians have been taught many valuable lessons by dentists, perhaps they in their turn may offer a hint that all extractions, and all operations about the mouth, however slight the dentist may deem it, should in the case of delicate children, be undertaken only with the greatest caution, since either the dentist may find himself dealing with true hæmophilism or one of the allied conditions to which we have adverted above. In either case if the loss of blood be very great the influence upon the child, it may be through the nervous system, will be of a kind to arouse alarm at the time, and possibly in the sequel lead to the most untoward results.

We have then to sum up our knowledge of hæmophilia and we find that the etiology and pathogenesis are alike shrouded in doubt, while in treatment we aver without hesitation that mechanical methods are superior to internal remedies; lastly we caution our readers to bear ever in mind the diathesis of hæmophilia and its consequences, and to regard no dental operation as being free from risk or devoid of responsibility to the operator.

BUCCAL PSORIASIS.

Abstract of a Clinical Lecture by Dr. Ernest Besnier, delivered at the Hospital St. Louis, of Paris.

The Professor commenced by saying that the lesion which was wrongly named by Bazin, "Psoriasis of the Tongue," has really no points in common with true Psoriasis. More recently it has been called "leucoplakia buccalis" by M. Vidal, and is really an epithelial Stomatitis. It remains superficial for a very long time, but when it does get deeper the disease becomes modified, and we then have to deal with a form of Cancroid. The primary lesion may however, remain stationary for a great length of time if proper hygienic precautions be taken.

The diagnosis of this affection is often complicated by the fact that the patients who suffer from it are old syphilitics.

Dr Besnier further believes that this lesion is not in any way of a specific nature, and antisyphilitic treatment instead of improving it, only makes it worse.

But syphilis does in some way appear to predispose to its development; this may be compared to what is observed in locomotor ataxy which is often met with, as is well known among syphilitics.

The first condition necessary to modify this morbid state, is the removal of all the predisposing causes, and if these precautions be not taken, the growth of cancer is always imminent. Malignant forms are also sometimes met with, but this is quite the exception, and usually under proper treatment the disease remains stationary. When there is any appearance of the growth of an epithelioma, it must be removed at an early period by surgical means.

Speaking of the treatment, Dr. Besnier goes on to say, buccal leucoplakia should be combated by means of sprays of vapor to the tongue, at first from simple water, then from water containing eight grains of sulphate of copper to the pint. Besides this, local medication should be made to the tongue several times a day with the following application:—

Cocoa butter - - - - -	dr.iij.
Iodoform - - - - - -	gr.j.

This is moulded into a kind of pencil. The use of iodoform in this way we are assured is very beneficial. The greatest care must also be taken to avoid subtances such as spices, salt water fish, pork, iced or very hot drinks, etc. The teeth must be frequently cleansed with lukewarm water. Should the surface become ulcerated, it must be painted with dilute chromic acid, (1 in 10), this is applied by means of a pellet of absorbent cotton wool steeped in the solution.

By this mode of treatment it is possible to induce a favourable change even in the most unfavourable cases, and even in those where we have to deal with mixed affections in which to a greater or lesser extent the lesions are due to syphilis. When this is the case, the external treatment must be applied first; interval remedies must only be had recourse to at a later stage.

The Dental Record says—The announcement of the sudden death of Mr. Alfred Rogers, partner with Dr, Cunningham, of Cambridge, will be read with much regret. Mr. Rogers was taken ill on the 5th April, suffering from an axillary abscess. This was opened on the 8th, and, after consultation with Prof. Humphry, a further operation was performed on the 12th, but he died at an early hour the following day.

THE TREATMENT AND PREPARATION OF THE MOUTH PREPARATORY TO INSERTING ARTIFICIAL DENTURES.

By Samuel Adams-Parker, L.D.S., Eng.

The dental organs are supplied to us for several important purposes, viz., mastication, articulation, and personal appearance; and it is for the restoration of either of these when partially or wholly lost that the dental Surgeon is consulted.

By the loss of one or more of the front teeth the general expression of the face is altered, and articulation becomes more or less impaired.

By the loss of the back teeth a more serious consequence takes place, for it is by keeping these in a healthy condition for the purpose of thoroughly masticating the food that the health and strength of the patient depends.

If the machinery of the mouth, so to speak, becomes impaired from any cause, and performs only a part of its duty, such for instance as the front teeth masticating, or trying to do so, those substances that ought to be worked upon by the posterior teeth, it is impossible to forsee the inconvenience and discomfort that may result; for not only is the food imperfectly prepared for the stomach, but the front teeth in performing work not assigned to them, soon wear down, and ultimately become useless in the more important office originally marked out for them, and in proportion as the art of dentistry can furnish mechanical means to prevent these evils when impending, or to cure them when present, it is entitled to the serious consideration of the patient.

My object in the remarks I have sketched out in this paper, will be to lay before you a few suggestions in as plain a manner as possible, and I think we as a young Association should keep as closely as possible to the practical bearing of our subjects, for if we do this I feel sure our communications to each other will be more easily understood and discussed, and the profit to be derived will be so much the greater. We not unfrequently meet with patients requiring artificial teeth who have been waiting months and even years rather than apply to the Dental Surgeon, for fear of being informed that some preliminary treatment of the mouth will have to be entered upon before such can be supplied.

I am quite prepared to admit that this is the case in a great many instances, and I am inclined to suggest perhaps to go so far as admit, that the forceps are brought into use more frequently than is necessary, and that a great many teeth which with a little care and early attention, might be saved, that have been needlessly sacrificed.

We not unfrequently meet with patients who suffer extreme pain, rather than apply for the cure which they would receive at the cost of an almost infinitesimal part of their previous annoyance; and when at last the alternative of extraction has to be faced, the patient will meet his coming cure considerably more than half-way, if instead of fancying all sorts of unreal miseries, he places himself under the care of a properly qualified practitioner, when no doubt in nine cases out of ten his fears will prove to be the creations of an over sensitive mind.

The applicant for Artifical Teeth in the majority of cases anticipates nothing more will require to be done than to have an impression of the mouth taken, (an operation unattended with pain but not pleasant to all), when in due time the same are expected to be supplied.

A certain amount of disappointment evinces itself when informed that the mouth is not in a proper condition to receive that which is required. The manner and conversation too will indicate what causes this. Advertisements have offered inducements, such as it is scarcely credible any sober minded person would believe.

The mouth upon a careful examination may be found to contain several loose and painful teeth and stumps, the gums may be inflamed, soft, and spongy; the practitioner is expected to place the clasps of the new teeth, round those already loose and inflamed, and as an honest man he avows at once his inability to do so. Better far to say this than deceive those entrusted to our care, and let them go on believing in the infallibility of such wretched advertisements, or taking a fee and sending them home with teeth which can only plague and distress them, and bring discredit upon ourselves and our profession. These remarks are introduced here as witnesses against the wholesale chicanery found in all large towns, in artificial dentistry. Such remarks the most special pleading cannot controvert; and is is therefore obvious to every candid judgment, that the healthy condition of the mouth demands most serious attention if the dentist wishes to confer comfort and health upon his patient.

I complain not only of the absurd inducement held out by such notices (in the way alluded to), but also that they tend to lower the tone and high position the dental profession has attained.

Through their agency a false impression may be produced (and who is there that has not met with such cases), that Artificial Teeth are useless, uncomfortable, and painful appendages. It will be no easy matter to disestablish such ideas, deeply rooted in the minds of some patients, as to the efficacy of a particular method of fixing in artificial dentures under all conditions of the mouth. Common sense has already been tampered with. Let there be ever so many painful teeth and loose stumps; let the gums be ever so much inflamed, and the breath as a natural consequence ever so offensive, they will in too many instances adhere obstinately to their first impression. The breath is to be rendered pleasant, disease in the gums and surrounding parts arrested —or rather say buried under the artificial teeth so much coveted.

Some will perchance have their own way and have teeth constructed under such unfavourable conditions, food will will be eaten with renewed irritability, days will be uncomfortable and nights restless, and as this might have been avoided, had they only considered for one moment that whatever advertisements may assert to the contrary impossibilities cannot be performed.

The remarks of Dr. Koecker, (years ago a distinguished practitioner) should be worthy of attention at this point: he says " There is perhaps not one case in a hundred requiring artificial teeth in which the other teeth are not more or less diseased, and the gums and alveoli also either primarily or secondarily affected.

The mechanical and chemical bearing of artificial teeth upon such diseased structures, naturally becomes an additional powerful aggravating cause of disease, already in a sufficient state of excitement, even if the teeth are mechanically well constructed; if however they are not well constructed, and are inserted with undue means, or force; or held by too great or undue pressure, or by ligatures or other pernicious means for their attachment, the morbid effects are still more aggravated, and a general state of inflammation in the gums and sockets, and particularly in the periosteum very rapidly follows. The patient moreover finds it impossible to preserve the cleanliness of his mouth, and the natural teeth as well as the artificial apparatus, in combination with the disease of the structures, becomes a source of pain and trouble, and the whole mouth is rendered highly offensive and disgusting, to the patient as well as to others."

It is impossible to over rate the importance of these remarks, expressed as they are in terms so convincing. Nothing can conduce to the health so much as artificial teeth wisely constructed and inserted into the mouth, rendered by judicious treatment capable of receiving them with comfort,—in other words when properly manipulated there should be a feeling, akin to the non-existence of any artificial apparatus in the mouth,

Anything that is calculated to irritate and inflame the gums should be carefully removed, and under the head of substances most injurious to the mouth, will be found, already mentioned, dead and painful teeth, loose stumps, and tartar. The parts in the immediate neighbourhood of diseased teeth are always in an unhealthy condition, and no effort should be spared to restore such to sound condition before a thought is given as to artificial substances.

It cannot be controverted that tartar plays a very prominent part in keeping up a diseased condition of the mouth, and he is a wise man, requiring artificial teeth to make it a point of great importance that a healthy condition of the oral cavity should be first established; though as is sometimes the case he may have to wait a considerable length of time before the artificial teeth can be safely, or pleasantly inserted. If the natural organs are encrusted to any great extent with tartar (not unfrequently the case) the patient should be recommended to give more than one or even two sittings for its complete removal, since it would be injudicious practice in my opinion to expose the necks of the teeth to a sudden change of temperature.

Tartar will sometimes accumulate in quantites so large that the gums alveolar process and surrounding tissues are involved in the mischief, and under such circumstances much care should be exercised for the restoration of the parts to health.

Professor Richardson of the Ohio Dental College, in his remarks upon the preparation of the mouth previous to inserting artificial teeth says " It may be stated as a general rule of practice that all remaining natural teeth that are not susceptible of being restored to a state of comparative health and usefulness, should be removed before inserting artificial substitutes, especially should this course be pursued wherever the remaining roots are found partially or wholly necrosed or the peridental membrane inflamed, and suppurating such teeth should be extracted if for no other reason than that they are offensive in the mouth, and tend in a greater or less degree to compromise the general health. An additional reason why they should be extracted, is, that their presence prevents in some degree an accurate and uniform adaptation of the mechanical appliance to all parts on which it is designed to rest, and this is particularly true of those cases, where atmospheric pressure is made available in the retention of the substitute."

When, after a careful examination of the mouth it has been decided what ought to be carried out in the way of extraction, this operation should if possible, be completed at one sitting; the gums and surrounding parts will absorb uniformly and not in patches, as would be the case if several sittings had been given, and the completion of the artificial case would be effected at a much earlier date.

To digress for one moment, in such cases the administration of an anæsthetics or not, must be an after consideration, and left to the discretion of the dentist. If it should be found that an anæsthetic would not be suitable to the constitution of the patient, or that the health is such as not to admit of more than a short operation at one sitting, then a little more time will be involved in the preparation of the mouth, and the completion of the case; under such circumstances it will be more advantageous to the patient to wait the additional length of time.

(*To be continued.*)

CASE OF SPASM OF THE MUSCLES OF THE FACE AND CATARACT DUE TO DENTAL IRRITATION.*

*Read before the Harveian Society.

BY HENRY SEWILL, M.R.C.S., L.D.S.

The patient was a middle-aged lady, unmarried. She had suffered all her life from bad teeth and neuralgia. During late years the suffering had frequently been acute, and she had had a constant succession of alveolar abscesses, with great swelling of the face, especially on the right side. She had long been under the care of Dr. W. Hoffmeister, of Cowes, who had frequently urged her to have her teeth attended to, but without avail. The patient could not overcome her dread of dental operations. About two years and a half ago, during 1881, her right eye became painful at times, apparently from neuralgia. In January, 1882, contraction of the muscles of that side of the face took place, and had persisted ever since. In July of that year, drooping of the right eyelid came on suddenly, and she then discovered that she had lost the sight of her right eye. Dr. Hoffmeister, believing that her condition was due to the dental disease, and having again in vain urged her to have her teeth examined, sent her to Dr. Ferrier. He reported of the case as follows.

She was a very nervous middle-aged spinster, with facial spasm and apparent neuralgia on the right side of the face and head. She said she could not open her right eye; but, on examination, this was found to be not exactly true, as with effort she could do so. The closure of the eye was due to spasm of the orbicularis muscle, and was not ptosis. She would scarcely allow her head or face to be touched: but there was evidently great tenderness in the region of the right upper canine. The neighbouring teeth were much encrusted with tartar, and the gums looked red and swollen. The right lens was almost opaque. Believing that the cause of the neuralgia, the facial spasm, and the cataract was in the dental disease, Dr. Ferrier insisted that she should have the teeth set right or extracted. That the dental irritation was the cause of trophic disorder leading to cataract, Dr. Ferrier considered most probable, looking at all the circumstances of the case, and the fact that the symptoms were entirely unilateral.

The patient was at length induced to have her teeth examined, and came to me. I found, in the upper jaw, the stumps of some molars, and the bicuspids, canines, and incisors, except the left central and lateral incisor. In the place of these was a vulcanite frame, with artificial teeth, attached to the neighbours. This had not been removed for years, and, as well as the rest of the teeth, was covered with tartar. The upper teeth were all carious, and had been the centres of long standing inflammation. The right canine was broken down nearly to the gum. Considerable thickening and swelling extended upwards over the root; and pus could be pressed from the gum through small fistulous openings over the roots of all the teeth. The lower teeth, of which about ten remained in front, were hidden beneath an enormous mass of tartar, which extended fully half an inch over the floor of the mouth. The patient's confession that she had endured years of incessant pain and discomfort from her teeth through dread of dental operations, was amply borne out by examination. Nitrous oxide was administered on two occasions, and the upper teeth were extracted. The tartar was gradually removed from the lower teeth, and an upper set of artificial teeth was provided. Within two days of the extraction of the teeth, the facial spasm entirely disappeared. The patient's health rapidly improved, but no change took place in the damaged lens.

This is the first case of disease of the eyeball due to dental irritation with which I have met. I see cases of neuralgia in the neighbourhood of the eye very commonly, and cases of neuralgia of the eyeball less frequently, in which the cause is easily traceable to the teeth, the eye being perfectly healthy.

The pain in some cases is attended with lacrymation; in a few with muscular twitchings of the face. The most frequent condition of the teeth giving rise to the neuralgia and other symptoms is caries, with exposure and chronic inflammation of the nerve. Patients are often unconscious of the condition of the teeth, the pain being distant and the teeth not aching. Touching the exposed nerve, or directing a stream of cold water on to the tooth, or into the cavity, will usually bring on a paroxysm of the distant pain and establish a diagnosis where doubt exists. Dental periostitis, exostosis, and necrosis, and also impacted lower wisdom-teeth, are less common causes of neuralgic pain.

From a paper lately read at the Odontological Society by Mr. Henry Power,† I learnt, with some surprise it must be confessed, that Mr. Power and numerous first-rate opthalmic authorities, British and Foreign, hold the opinion that dental lesions are very frequently the cause of serious diseases of the eye. Mr. Power lays it down as a maxim to be generally observed, that in all cases of threatening glaucoma, especially when this is associated with ciliary neurosis and obscure pains in the temples and maxillary orbital regions; in all cases of mydriasis, and probably of myosis, originating without apparent causes; in all cases of sudden paralysis of either of the orbital muscles, or of loss of sensation in the absence of cerebral symptoms in all cases of phlyctenular disease of the conjunctiva; in all cases of ulcers of the cornea resisting ordinary treatment; in all cases of sudden failure of accommodation, especially in young children; and, finally, in cases of exophthalmia, the condition of the teeth should at least be examined, and, if faulty conditions present themselves, these should be at once rectified, and then one at least of the possible causes of each of these diseases will be removed. To this list must now be added cataract; for, although Mr. Power tells me he has not himself seen such an one, he accepts the case I have narrated as probably due to dental irritation.

Mr. Power gives many cases of his own and of other well known observers—Hermann Schmidt, Galezowski, and von Grafe—in support of his opinions; and these opinions were corroborated by other ophthalmic surgeons in the discussion at the Odontological Society. Mr. Power points out the various ways in which diseased action about the teeth may reach the eye. These are (1) by inhibition; (2) by trophic or vaso-motor influence (under this heading Mr. Power would place my case); (3) by extension of neuritis; (4) by reflex irritation, or sympathy.

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† "On the Relations between Dental Lesions and Diseases of the Eye," by Henry Power (*Trans. Odont. Soc.*, November, 1883).

I must express no opinion upon these views; but I may repeat I have never, with the one exception, met with a case of eye-disease in which there seemed reason to suspect diseased teeth as a cause; that is, I have never had such a case referred to me as dental surgeon in hospital or in private practice.

I trust my case may be considered worthy of record and of discussion; and, in order to stimulate discussion, I have ventured to cite the recent *apropos* utterances of Mr. Henry Power.

DEGENERACY OF DENTAL TISSUE AND THE DIETARY INFLUENCE OF SILICATED PHOSPHATES.

By Richard Owen, Esq., Wolverhampton.

(*Concluded from p.* 406.)

This question has been so fully taken up of late, that I will hasten to consider 3rdly. Food elements. During the last few months, we have been favoured with some very interesting and elaborate arguments, from the pen of Dr. Patrick, which have appeared in the "*British Journal of Dental Science*" in which he condemned the view held by many old-fashioned folk in respect to the consumption of whole meal bread. Some of his conclusions, I heartily endorse—to wit, Dr. Patrick says, "that which will support life must replenish the waste of all the organs of the body; and no article can, as food, satisfy the requirements of life that fails to comply with this condition."

Now, Mr. President and gentlemen, this question I consider of the greatest moment, and happily, I shall be able to digress from the practice of writers generally. We often read elaborate articles on the pathological condition of some portion of our physical frame, and, alas! it ends there.

Where's the remedy?

The digression will be that I shall endeavour to give a remedy and answer in the affirmative to this question. I have found in practice immence benefit by advising a diet of properly ground decorticated wheat carefully baked (and here let me remark, the grain must be selected of a special quality, and ground in a steel mill), in combination with easily assimilated general dietary. Chapman's wheat flour I have found a very excellent food both in childhood and in pregnant women. Nicholls's "Food of Health," another cereal preparation, and Symington's "Egyptian Food," made from lentils, I have found very excellent articles of diet in degenerative dental tissue. And now I must claim your attention whilst I record to you some interesting experiments I have conducted for some years in reference to silicated phosphates administered in degenerate tissue of both children and adults. I commenced my experiments by giving silicates, believing that the hard dental tissue would be benefited by silica; this is an element, said by most authors to be unassimilative and absolutely useless; and so it is said of the mineral constituents of brown bread; but I am reminded of Majendie's experiments with dogs fed on white and brown bread; on white bread the animals died, on brown bread they lived in health. There are some things in the animal economy we cannot understand on theoretical grounds: experimental facts are stubborn things and valuable.

I found it necessary to give silica very largely triturated with lactose or milk sugar, to wit, 5 grains of silicate of soda with 800 grains of milk sugar, and in cases of difficult dentition of children I found this remedy of very great benefit. In later experiments, I have given the same agent in combination with calcis phosphas, the formula has been—triturated silicate of soda, 1 gr.; calcis phosphas, 2 grs.; lactose, 2 grs. thoroughly triturated and taken three times a day.

This combination has been given very successfully for some time in difficult dentition of children—in early caries of the deciduous teeth—in degenerate tissue of pregnant women—and in young mothers. In very many pregnant women we all know the food question is a difficult one; the appetite is capricious, and in these cases the remedy has been found of great service. In support of my proposition that silica can be assimilated, I find the human body of 154 lbs. weight contains 30 grains of silica—a very small proportion, but sufficient to show that it can be assimilated, and, in my opinion, is a very important element as a therapeutical agent; and in support of entire wheat consumption, I must remind you, that there is an element called cerealin, a nitrogenous substance closely resembling diastase, contained in the epispermium the sixth membrane of the seed, which assists the digestion of whole meal bread.

In reply to a statement made by **Dr.** Patrick that "the ligneous and silicious layers which form the cells and coats of the wheat grain are insoluble, and are found in the excrement of the animal unchanged." This is no doubt very true, and the same may be said of lime salts, as also of albuminoid elements when taken in greater abundance than can be consumed as food; but are we to suppose from this that the animal economy does not appropriate its requirements?

The most practical reply to this is, that the health and general physique improves under the regime here sketched out, and, to my mind, we cannot desire anything more conclusive. I have invariably found neuralgia associated with degenerate tissue in patients whose dietary and hygiene have not been considered; and, in these cases, the use of the compound has been attended with the best results, and especially in patients whose capricious appetite precluded the consumption of proper food.

If I could intrude upon your time any further, I should like to urge upon the members of this society the humanity of self-sacrifice in rendering help to the poor, by establishing dental dispensaries in every town of importance.

At present these institutions are very rare, and we have to confess how much we are behind our colleagues in medicine and surgery in this country. Few can comprehend the time devoted, and the services rendered to suffering humanity, by men of eminence in general surgery, and I think we should imitate their noble and unselfish generosity—and on our part it is quite a necessity to maintain the true dignity and advancement of dental surgery.

Now, Mr. President and gentlemen, I hope I have not wearied you with the length of my paper, and trust you will thoroughly discuss the subject, not according to the imperfect way in which I have written, but according to the importance of the subject itself.

INCOMES OF AMERICAN DENTISTS.—A trans-Atlantic writer gives as average incomes: Small country town, from three to four hundred a year; in a populous country town twice this; while in cities, incomes range from twelve hundred to six thousand a year in the case of the successful fashionable dentist.

TO REMOVE NITRATE OF SILVER STAINS FROM THE HANDS.—Wash the hands in a solution of iodide of potassium 1 in 10, and ammonia 1 in 1,000.

CHLOROFORM AND OTHER ANÆSTHETICS.

By W. Bowman Macleod

(*Concluded from page* 398.)

With me the use of ether has been very unsatisfactory. Nitrous oxide has not in my practice been accompanied by, or as far as I have been able to ascertain, been followed by any serious results, but its exhibition has not been unattended by embarrassing accompaniments, and has not been free from cases which have caused me some apprehension and considerable anxiety.

In chloroform I have had fewer cases which have caused me anxiety, but unfortunately I have had the sad experience of being associated in a case which terminated fatally, and the relation of which I deem it to be my duty, however painful to my coadjutor and myself, to lay before you, that we may mutually benefit by the experience and walk warily under a deep sense of the responsibility which rests upon us in operating under anæsthetics.

Some short time ago I was consulted regarding the extraction of an upper and two under molars in the mouth of a boy 11 years of age who, twenty-five days previously, had been attacked by measels of a mild type, but who was then completely convalescent. The teeth were the source of constant irritation, and frequent daily or nightly attacks of long continued pain, which were not amenable to the usual remedies, and were wearing out the boy's strength. The relations wished nitrous oxide to be administered. This I declined to accede to, as I was of opinion that the case was unsuitable for gas: 1st, Because the operation was of too prolonged a nature to be accomplished within the period of anæsthesia induced by gas, and 2nd, Because the boy was of an exalted nervous temperament, and it has been my experience that in such subjects, between the ages of 10 and 14 years, the administration of gas is frequently attended with opisthotonos.

I therefore recommended that the family medical attendant should be consulted as to the advisability of administering chloroform, and if considered safe and necessary under the circumstances, I would attend at the boy's home at a time convenient for the operation. I further proposed that in the event of the lad's having chloroform, advantage should be taken of the opportunity to extract other three teeth, the removal of which I considered necessary for the healthy development of the dental arches, which were in a remarkable degree overcrowded. Satisfactory arrangements having been made, I attended at the boy's home on the following day, at 5.20 p.m., in conjunction with Dr. Ronaldson as chloroformist.

The usual preparations for a comfortable and successful issue had been made, the patient having dined between one and two o'clock. The room in which the operation was performed was well adapted for the purpose, being large, airy, warm, and well-lighted. All the surroundings were cheerful, and the patient himself during the day, although labouring under the excitement of the situation, was untroubled with fear or depression, being sustained by the healthy and encouraging conversation of his relatives and the prospect of getting rid of the offending molars. On our arrival he began to show signs of fear and nervous excitement. With some little difficulty we got him to lie down on the couch, and submit to the administration of the chloroform, which was given on a folded napkin, the patient lying on a sofa with his shoulders and head slightly elevated. The nervous tension before referred to continued during the earlier stages of anæsthesia, which in this case were prolonged, and caused Dr. Ronaldson to remark that this boy required twice as much chloroform as any boy of his age to whom he had previously administered it.

At length anæsthesia was induced, as demonstrated by failure of response upon touching the conjunctiva. It was then decided to begin the operation, and I extracted the first lower molar right. Symptoms of feeling being shown by the lad's crying out, Dr. Ronaldson administered a further inhalation.

The breathing at this time was quite normal and the pulse moderate.

I then extracted the remaining five teeth, finishing with the first upper molar left, the crown of which being entirely destroyed with caries, had to be removed in two movements; the two buccal fangs being first extracted, and then the palatine.

Partial consciousness was again manifested during the withdrawal of the last tooth, the boy crying out and attempting to resist. Just before the complete extraction of the tooth

Dr. Ronaldson observed the boy's colour change to a bluish white, at the same time the restlessness gave place to flaccidity and quiet, indicating a failure of the heart's action; the breathing also became weak and shallow.

Prompt measures were immediately taken to restore the suspended action of the heart and strengthen the respiration:—The boy's head was instantly hung over the end of the couch, and artificial respiration was resorted to by Sylvester's method, the tongue at the same time being pulled forward; by this means air was freely passed in and out of the lungs. Spontaneous efforts at respiration occasionally occurred at first, and encouraged us in our efforts. Friction of the chest and a hypodermic injection of brandy were at the same time resorted to. The windows were opened, and the couch being near the windows, there was a plentiful supply of fresh air. The evening being warm, there was no fear of a chill.

Notwithstanding careful, persistent, and prolonged efforts, the patient never regained consciousness, and one more was added to the list of deaths associated with the administration of chloroform.

This incident is one which should make us feel deeply the responsibility which accompanies our act when we, in the benevolent pursuit of our profession, suspend for a shorter or greater time that function of sensation which guards the life portals of man, and makes us all the more eager to discover some new anæsthetic, which would give us the powers we so much desire, viz.—the gradation of narcosis from simple to profound at the will of the administrator, with immunity from death and freedom from nausea or vomiting. On the other hand, while deeply alive to the probabilities of accidental termination, I think we cannot refuse to make use of our present resources; and, placing the great good which we know to accompany and follow their exhibition, judge dispassionately, and use the agent which our own experience and the experience of others has shown best adapted to the peculiar circumstances of the individual case. Should any untoward result follow our action, let us conscientiously make the narrative of detail professional property, in the hope that it may assist in the solution of the mystery which at present surrounds the complex physiological action of narcotic agents.

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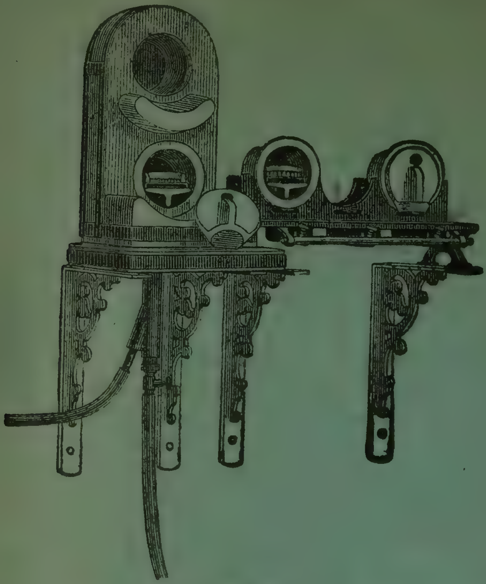

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COMPARATIVE DENTAL PATHOLOGY.

By JOHN BLAND SUTTON,

LECTURER ON COMPARATIVE ANATOMY, &c., MIDDLESEX HOSPITAL MEDICAL COLLEGE, LONDON.

(*Continued from p.* 358.)

Odontomes—Numerous examples of odontomes, or tooth tumours, have been recorded in animals. E. M. Rousseaux, Goubax, and Charles Tomes (18) have found them with the teeth of horses. Mr. Tomes's case is interesting, inasmuch as the tumour took up a position with the other teeth, and for a time performed the function of a tooth, for it was worn by mastication. The specimen is now in the Museum of the Odontological Society.

Magitot mentions an odontome connected with the molar tooth of a horse, of which he received a photograph. The tumour was a voluminous one, and weighed one thousand grammes.

The same author gives figures of some excellent examples of tooth tumours occurring in horses, hippopotami, elephant, a wild boar, and in oxen. The most beautiful of all is one developed from the tusk of a young white elephant of Siam.

The case belonged to Professor Lorain. The tusk was normally formed of ivory and cement, and presented on one side, about its middle, an enormous ovid tuberculated mass, measuring 20 centimètres in length and 9 centimètres across. It was attached to the tusk by a narrow pedicle. The Odontological Society possesses a very large tumour of this nature, also from the tusk of an elephant.

CHAPTER V.—FRACTURE OF TEETH.

When we remember that animals not merely use their teeth for masticatory purposes, but also for procuring or retaining their food, it is not surprising that fractures of teeth should occasionally occur.

It is well known to anatomists that in viperine snakes provision is especially made to protect these reptiles from the dire effect of the loss of its fangs by fracture, so liable to take place when these snakes strike their prey. When not in use it is carefully stowed away inside the mouth, and a second smaller tooth in each premaxillary bone is always kept in reserve in case of accident.

Dr. Murie has noted two cases of fracture of teeth—one in a bear, a broken canine, the other in a hippopotamus; the details of the extraction of the injured tooth from the mouth of this ponderous brute are extremely interesting and exciting.

Dr. Walker recorded the case of a monkey kept as a pet, but the owner, fearing the creature would bite his children, broke off the canine teeth. As a result of this treatment, the pulp of one inflamed, and at the animal's death hypertrophy of the bones of the face of the affected side had taken place to a considerable extent, probably due to nervous irritation set up by the exposed pulp.

The teeth of adult carnivorous animals kept in captivity are frequently broken, especially the canines, brought about by the creatures biting the iron bars of their cages, and gnawing the hard, compact tissue of bones.

Among the most interesting of this class of cases must be included the hippopotamus tooth described and figured by Owen in his "Odontography." It was an inferior canine tusk, which showed clearly that, by some injury or other, it had been snapped across the implanted and hollow base with probably injury to the socket; but the broken portions adhered together, and to the surrounding parts, inflammation of the pulp and capsule had ensued, osteo-dentine formed, and the two fragments united—the pulp cavity being obliterated at the seat of union. The remains of the pulp cavity in the crown were unusually conspicuous in the form of a narrow channel near the concave side of the tusk, and opening like a fistula upon that surface; just beyond the fracture another irregular slender canal extending transversely through part of the uniting substance, and opened on the concave side of the tusk, just below the preceding.

Mention must be made of the case described and figured by Mr. John Tomes (27), in his "System of Dental Surgery," of a fractured tusk of a hippoptamus which had become united. The specimen clearly shows that union may take place after a severely comminuted fracture, with considerable displacement of the fractured part. Mr. Tomes also points out that the union is effected by cementum. For such union to take place the tooth must be broken within the socket, but whether the repair takes place from cementum alone, or from deposition of tissue from the pulp cavity does not seem at all clear and decisive.

CHAPTER VI.—PARASITES.

On February 21st, 1871, Mr. Sclater (19), exhibited before the Zoological Society of London a pair of tusks of a female

Indian elephant (*Elephasindicus*), which presented the appearence of having been corroded or eaten away in the basal portion immediately adjacent to where they entered the gums. Just below this, on the outer side of each tusk, was deposited a mass of egg-like bodies, arranged in regular series, apparently of some dipterous insect, and somewhat resembling those of the common blowfly (*Musca vomitoria*). These tusks had been sent from India by Mr. G. S. Roden, of the 1st. Royals, who gave the following account of them:—

"The tusks belonged to a female elephant, shot last June at a place called 'Muddry,' at the foot of the Manantowady Mountains, in Malabar.

"Directly after shooting her I lifted up her lips to see the size of her tusks, and then noticed the deposit of eggs on them. I had them carefully cut out. On cleaning the tusks afterwards I noticed that they had been eaten away at the ends, and also near where the white eggs were. *There were no maggots* in the grooves at the end of the tusks; they were merely filled up with some dark dry clay. The tusks have been slightly polished over, but I took great care that the eggs should not be touched."

Mr. Sclater then drew attention to a letter in the *Field* newspaper of March 15th, 1870, in which the following statement appeared, signed by a well-known Indian sportsman, under the pseudonym of "Smoothbore":—

"Has any zoologist or microscopist ever noticed how the tusks of female elephants are attacked and eaten away by some parasite? And is it not most singular that this has never been observed in the tusks of the male?"

Professor Flower has also drawn attention to an exactly similar pair of tusks in the Museum of the College of Surgeons. Mr. Charles Tomes mentions a statement of Major Rossall, to the effect that the tusks of all the female elephants that sportsman had seen were so affected, and that the larvæ or pupæ of a dipterous insect are found embedded in the gum and attached to the surface of the tusk. Mr. Tomes suggests it would be of interest to ascertain whether the larvæ really eats away the tusk or whether the wasting of the tusk be due to absorption set up by the irritated gum.

The case next to be related is of considerable value, on account of its bearing on this erosion of the tusks of a female Indian elephant said to be due to the pupæ of a dipterous insect. The history of the case, as reported in the "Proceedings of the Zoological Society" for 1875, by the late Mr. A. H. Garrod, runs thus:—

The elephant, a female, was born in India (prabably in the spring of 1850). The mother and calf were purchased by the Zoological Society in 1851. The young one lived until July 7th, 1875, being therefore twenty-five years old. The Superintendent, the head keeper, and the elephant keepers are of opinion that it continued to grow until within a year of its death. Its height at the withers, at the time of its death, was just 8 feet.

For the last four years the animal had lost the power of extending its trunk, from paralysis of the anterior intrinsic muscles of that organ. It has thus not been able to throw its trunk over its head, or even the least forwards; when it took food it flexed the trunk so as to present the orifice forwards. This symptom is one of decay.

For the last two years of its life it exhibited marked signs of rheumatism, varying in severity, but very considerable at times. This was most manifest on its kneeling down to be saddled.

For about six months the animal did not as it was formerly wont to do, lie down at night. On the night of the 6th of July it fell on its left side and did not subsequently make any attempt to rise. It died during the night of the 7th, having, at 8.30 p.m., had a large dose of strychina given it by the mouth. Whether the poison was the cause of death is uncertain. Over 100 grains were administered. It may be mentioned that the teeth just coming into wear had, in both jaws, 23, 24, or 25 plates; they were therefore the sixth molars. The epiphyses of the long bones were firmly united. No entoza were found. The lungs were infiltrated with tubercular deposit.

The history has been reported at full length on account of the important bearing it has upon the condition of the tusk. After death the creature decomposed so rapidly that careful dissection was impossible. The following facts came to light during the disposal of the carcass, and I state them on the authority of Mr. E. Ockenden, the excellent assistant in the Prosecutor's Room at the Gardens. During the animal's life no tusks were visible, but on looking into the mouth after death, a projection was noticed on the mucous membrane just where a tusk ought to be. More careful search revealed the end of a tusk projecting one inch above the alveolus, and on chipping away the bone a rudimentary tusk was exposed. There was no corresponding tusk on the opposite, although very carefully sought for.

The tusk measures 13 inches in length, and is four inches at its greatest circumference. The exserted portion measures exactly one inch. The succeeding 3 inches of the tusk are extensively eroded on one side only, so that in places just one-half of the thickness of the structure has been removed. The nature of the erosion resembles in every respect that which, in the case of the tusks previously referred to, is said to be due to the larvæ of a dipterous insect.

The importance of this observation is obvious, for the erosion in this instance clearly cannot be due to the larvæ in question, for in this case the morbid action occurred in the tusk deeply seated in the alveolus at a spot certainly inaccessible to a dipterous insect.

With these facts in view, I think it fairly obvious that this form of erosion is due to absorption, and that the presence of the larvæ cannot be regarded as having anything to do in the matter. In the other reported cases the tusks came direct from India, this being, I believe, the first case recorded in an elephant which left its native country at so tender an age.

The only explanation I can offer on the matter is this one: —Pathologists have long been aware that morbid changes are more prone to attack undeveloped, functionless, or imperfectly acting organs; hence I imagine that the tusks of female elephants are more prone to inflammation than the full developed representatives in the male.

(*To be continued.*)

REMARKS ON THE DIFFERENTIAL DIAGNOSIS OF THE HARD TUMOURS OF THE SOFT PALATE.

Abstract of a Paper by Dr. E. Magitot.

Hard tumours of the soft palate are very uncommon; * under the name of *enchondromata* we find *three* cases recorded. Two of these were observed by Abernethy and Jourdain. † The third described by M. Prélat under the name of *adenochondroma,* ‡ was dissected by M. Malassey, who thought it must be ascribed to the degeneration of one of the salivary glands.

Osteomata are not more common nor better defined. If we exclude those solid productions which, according to Chassaignac, mark the first stage of tertiary syphilitic symptons, we only meet with very few relations of cases of exostoses in the writings of Vidal de Castis and Toirac;

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* Vide Fano. Des turneurs de la boute palatines et du voile du palais. These de Concours, 1857.

† Jourdain. Maladies de la bouche, 1778, Vol. 1, p. 417.

‡ Prelat Bulletin de la Sociéte de Chirurgie, 1877, p. 714.

according to these authors they are very frequently met with on the surface of the vault of the mouth.

The exostoses said to be so common, should we believe, be looked upon as simple *osseous nodosities*; they are frequently met with both in the upper and lower jaw, and are due neither to syphilitic gout, nor any other diathesis.

The microscopic examination of these tumours has shown that they are composed solely of compact and eburnated osseous tissue, in which there is an excess of the ground substances over the osteoblasts and their processes.

We now come to cysts of the region of the palate, and of these we have only found two or three examples recorded in medical literature: one due to Sancerotte * and described under the name of *serous cyst*; the second to Cruveilhier † which appears to have been an abscess caused by a tooth.

The third case which we owe to M. Henrot ‡ was described by him as a sebaceous cyst, evidently a misnomer, for as we all know, the mucous membrane of the palate contains no glands of this kind.

Latterly, two cases of hard tumours of the palate have come under my notice, and in both the diagnosis was so difficult to establish, that I have thought them well worth recording.

The first of these was published quite recently. * I need only observe that it related to the slow and progressive appearance of a tumour in the mouth of a woman aged seventy-four, who had lost all her teeth many years before. The tumour gave rise to violent neuralgic pains, but it was not interfered with, and several years after its first appearance, the tumour gave passage to a canine tooth which a careful enquiry into the past history of the case, showed to be an instance of tardy and heterotropic eruption in the centre of the hard palate.

This is far from being a solitary example; a good many others will be found recorded amongst others, by Jourdain. A book on the anomalies of the dental apparatus published in 1877 by me, † contains the relation of a number of these cases.

My second case has not been published before, and is in some respects allied to the former, for the tumour of the palate had also its starting point in a dental anomaly; but it differs from it by the far larger size of the swelling, by the degree and remarkable nature of the symptons, and by the still greater difficulty of the diagnosis.

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* Sancerotte Gazette Médicale de Paris, 1856, p. 485.

† Cruveilhier. Esai Jur T'andtoine pathologigue, 1816. Vol. i. p. 320.

‡ Fleurot Union Médicale du Nord Est. July 1880, p. 27.

* Gazette des Hopitaux, 1883, No. 461. B.J.D.S., Vol. xxvi, No. 372.

† Traite desAnomalies du systeme dentaire chez. St. Slomard et lis manumiteres.—Paris, 1887.

The following is a summary of this case:—Hard tumour of the palate; violent neuralgic pains on the right side of the face; paralysis of the external rectus muscle of the right eye; internal strabismus; doubtful diagnosis; tumour supposed to be of specific nature; failure of an antisyphilitic treatment; sudden inflammation of the whole mass; incision of large osseous pouch containing crown of a canine tooth fixed in its floor; gradual collapse of cyst walls; immediate cessation of all symptons.

The subject of this observation is a healthy man aged thirty, who has never at any time suffered from his teeth or mouth. No history of syphilis.

Eight months ago a hard, incompressible, indolent and immovable tumour made its appearance in the root of the mouth almost in the centre, and a little to the right of the middle line. The tumour increased very slowly indeed, and gave rise at first only to a slight impediment in the functions of the mouth.

Two months after its first appearance, the tumour had attained the size of an almond; and before long the immediate neighbourhood of the tumour became the seat of pains of a neuralgic nature, having supra and infra orbital points of maximum intensity, and irradiating to the skin of the same side of the face.

A short time afterwards, the patient noticed that he had an inward squint of the right eye.

The patient consulted several medical men, amongst others one of our most distinguished syphilographers, who, without the slightest hesitation, pronounced the tumour of the palate, the facial neuralgia and the ocular paralysis to be of syphilitic nature.

A specific treatment was instituted, and continued for six weeks, but produced no effects.

The tumour went on increasing in size, when suddenly owing no doubt to a contusion caused by some kind of food during mastication, the tumour became inflamed and painful on pressure, and enlarged very rapidly.

The patient was in this condition when he first came under my notice. I found evident signs of an abscess which I proceeded at once to open.

The knife met just beneath the mucous membrane, with a resistance evidently of an osseous nature, which prevented its further progress and obliged me to limit the incision. There was an immediate and copious flow of a liquid evidently composed of pus, and viscid and stringy serosity.

The tumour, however, did not collapse, and remained as tense as before the incision. I now explored the cavity with a probe: the probe travels round a cavity with solid walls, at the bottom of which it comes upon a hard projecting body which is smooth, rounded and polished; evidently the crown of a tooth. We were dealing with a follicular cyst of the roof of the palate.

With a pair of scissors I removed a portion of the wall which was found to consist, 1st, of the mucous membrane of the palate very much thickened and injected; 2nd, of a thin osseous lamella, but very compact and resisting; 3rd, of a layer of connective tissue in the shape of a loose membrane lined on its free surface with a layer of pavement epithelium, which appears quite simple, and without any villi. The liquid which exuded contained a few lencocytes and crystals of cholesterine.

On examining the dental apparatus, the right upper canine was found wanting; from what the patient said it had never appeared.

The cavity was plugged and washed out every day, and in about a fortnight the cyst had entirely collapsed, the osseous wall had become absorbed, and the crown of the canine tooth appeared between between the lips of the incision, where it no doubt still remains, for owing to the very slight extent to which it projects it cannot be seized with any instrument, and its indolent nature and the slight inconvenience it causes, are sufficient grounds for not interfering with it.

This case appears to me to warrant the following conclusion:

Conclusions.—1st: A kind of tumour is met with in the roof of the mouth, which is caused by the heterotrophyof a dental follicle. This may be divided into two sub-classes (a), eases of simple eruption of a tooth covered only with the mucous membrane; (b), cysts formed in a dental follicle which has itself become displaced.

2nd: In the latter case the follicle becomes transformed into a cyst the wall of which is formed by the wall of the follicle surmounted by an osseous lamella derived from the inferior layer of the palate.

3rd: In cases of tumours of the palate, the diagnosis must always be supplemented by a careful examination of the dental apparatus. Any numerical anomaly (diminution) established either by the present examination or by the past history, must always lead to the hypothesis of the case being an example of dental heterotopy of a cystic or non-cystic nature.

There are thirteen thousand dentists in the United States alone.

British Journal of Dental Science.

LONDON, MAY 15, 1884.

DENTAL FEES.

The French journals are vying with the American in their attempts to settle the vexed question of what should be the dentist's fee?

That the question is full of interest no one will gain say, but it is certain that there will exist persons, and we own a sympathy with such, who affirm that no State tariff ever could exist, and if it were started it would ere long become a dead letter. The writer of some recent articles in a leading French journal seems enamoured of this idea of State regulated fees. We are told that the public pillage the dentists and that the dentists themselves are not immaculate. It is urged that heavy fees have been exacted for imperfectly executed work, the public are aggrieved, and the reputation of the dental profession suffers and, in short a reform is needed somewhere. While admitting that abuses may exist, we fail to see that any legislative enactments could touch the question or ameliorate the evils if such there be. It must always be a difficult question, to decide what fee to ask and what allowance to make in special cases. Not only does that question burn itself into the notice of the dental surgeons, it is the nightmare of the general practitioner, and the *questio vexata* of the physician and pure surgeon.

Hard it is, however, to imagine how a practical man can soberly and honestly suggest the establishment of a fixed tariff. Who does not know the hundred and one cases which crop up daily, and which are so different alike in their social relations, the amount of raw material they consume, and last but by no means least the strain they impose upon the temper, energy, and physical endurance of the operator. These cases could never be equitably settled by one tariff, nor, we venture to maintain, could any system be devised which would in any one case, at once settle an appropriate fee. A well-known "coach" was reported to have said he could teach any body anything, "but," he added, significantly, "I cannot supply brains to those who lack them." So is it in the question of dental fees, the State, or a committee of the leaders of the profession could establish a rough and ready tariff, but the charge in each case must be decided by the common sense and tact of the dentist. It is sad to relate how often it happens that reference to the social standing of the patient may mislead, patients too poor are apt to grow not less proud, while amongst the most affluent are those who scorn not to seek hospital gratuity or demand a reduced fee by some petty subterfuge or another. It is, of course, the common voice of the profession which establishes what uniformity there is in dental fees, but this cannot apply to such men who have made special study of one department, and who as experts in one branch naturally, and it seems justifiably so, exact special fees.

It seems not unlikely that cases will arise of disputes between patient and dentist—such a case we reported recently—and then it is of the first importance that the widest view of the question should be taken by those who have to offer evidence as the justice or the reverse of charges made for work performed.

More serious damage can very easily be done by evidence carelessly offered, or worse still by evidence supplied by one who possesses little or no special knowledge of dentistry. It seems then, to us, that the consideration of these facts made the proposal to agitate for State tariff wholly visionary or even mischievous. Were the members of the profession, one and all to work in harmony upon this matter and suppress jealousies or self-seeking we should hear less of the difficulty of fixing fees and should have fewer opportunities to regret the dragging of adviser and patient into a public court. It should be carefully borne in mind that a layman cannot appreciate the value of the time or labour bestowed upon him by his dentist, and so is sometimes apt to grumble at a fee which probably is truly modest enough.

THE MEDICAL SICKNESS, ANNUITY AND LIFE ASSURANCE SOCIETY.

It was reported at the last meeting of the Medical Sickness, Annuity and Life Assurance Society, that the fund had already reached a position at which the numbers of members entered ensured the solidity of the Society; and that there was an adequate margin, according to actuarial allowance for the working expenses, which had hitherto been kept down to an unusually low point, and that this would continue to be so. Arrangements were at the same time made for bringing the objects of the Society under the notice of the Presidents and Secretaries of the branches, with a request that they would submit them to the notice of the members at the forthcoming branch meetings; and communications were received from Mr. Brierly (Manchester) and Mr. Ravenhill (Birmingham), announcing the intention to form local committees in those two great towns from existing members and othes. It was resolved also, that all members joining before the end of May, should rank as foundation members, and be entitled to the accruing advantages in respect to the date at which they would be free to receive the benefit of assurance. The whole of the preliminary expenses up to date were provided for and written off, leaving the Management Fund untouched.

THE ORDINARY RUBBER CEMENT which is so much used by shoemakers, is made by dissolving a quantity of gutta percha in chloroform or carbon disulphide until the solution has the consistency of honey. Thin down the parts to be cemented, then spread a small quantity of cement well over the parts to be joined. Warm the parts over a flame or fire for half a minute, bring the surface to be united together, and hammer well or clamp firmly. The cement dries in a few minutes.

THICK RUBBER DAM.—A recent writer upon this subject tells us he first employed medium rubber dam, and then had resort to thin. This he found tore, and was also troublesome as it folded over and got in the way. This led to the employment of thick rubber. It was found to possess very many advantages. A hole could easily be punched in it, if stretched over a tooth without its tearing. It also clings as tightly to the tooth as to obviate the use of a clamp. It will not fold over or tear, nor will it wrap itself about a bur.

A CASE IN PRACTICE.—Under this heading, a curious case is reported from America. The patient applied to a dentist to have several roots and teeth extracted. Nitrous oxide was administered, and the teeth removed with the exception of a portion of the left upper second bicuspid. Upon applying the forceps, this portion gave way, the dentist imagining that it had slipped through the forceps.

The mouth was examined after the bleeding had ceased, and the root appeared *in situ*. Upon wiping the place with wool, the root again disappeared, but this time it was seen to fall back into the antrum.

After cutting away some of the alveolus, the root was at length seized, and with difficulty.

SOLUTION OF CHLORAL IN WOUNDS OF THE MOUTH.—An aqueous solution of chloral 1 per cent. has been recommended by M. Perier of the St. Antoine Hospital, Paris, as an antiseptic in mouth complaints. He lauds this application in buccal inflammation following injury or operation, or the eruption of the third molar teeth. It is said to have deodorant as well as antiseptic powers, and also to act as a seditive relieving pain and lessening inflammation.

THE OBSEQUIES OF A SET OF TEETH.—Lord Ronall Gower writing in "My Reminiscences" says:—"There is a full length by Sir Joshua, of Lady Salisbury the present Lord of Hatfield's grand-mother who was burned to death here—in fact, the poor old lady (who was over eighty) was the cause of the fire that nearly destroyed Hatfield in 1832. It was supposed that Lady Salisbury had caught fire by the feathers in her wig having come in contact with a lighted candle all that could be seen of the ancient lady was her *set of false teeth; over those thef uneral service was duly read, when they were placed in the family vault.*"

NERVE STRETCHING FOR ODONTALGIA.—Nerve stretching for neuralgia in various situations has become one of the established operations of surgery, but a somewhat novel innovation in this mode of treatment has been suggested by Dr. Bernard of Cannes. Writing upon this subject, he says that it has frequently occurred to him that while attempting to extract teeth, as a cure for intense pain, he has been frustrated just as he has had one good pull, by the patient seizing his hands. In these cases he has remarked that the loosening of the tooth with accompanying dragging upon the nerves and soft tissues has cured the toothache. Following this observation up he has since practiced simply lengthening of the teeth—sufficiently to ensure stretching of the nerve fibres—instead of removal of the teeth for odontalgia, and has found his plan successful.

PATIENTS are often much annoyed by neuralgia after roots of dead teeth have been stopped or treated. This may often be relieved or arrested by

R—Tinct. Aconite	gtts 5.
Tinct. Gelseminum	„ 10.
Aqua.	drms. iv.

Sig. Teaspoonful every hour.

Dental Treatment and Epithelioma.—Patient—a man about forty years of age, a tobacco manufacturer, of temperate and regular habits; had always enjoyed good health. In 1882 he had a partial upper plate placed in the mouth over several diseased roots. The dentist advised leaving the roots in position without having attempted to restore them to healthy condition. The plate was unsatisfactory, and in about three months the tongue was irritated by one of the teeth which had been broken. A sore spot developed opposite the left molar. For several weeks it gave but little trouble, but he neglected treatment, until he suffered pain from eating hard or highly-seasoned food. He came under observation in February, 1883, at which time the left side of his tongue opposite the molars and bicupids was about twice its normal thickness, and had a "lumpy" feeling when pressed between the thumb and finger. The left submaxillary gland was enlarged to about the size of a walnut. Five teeth and four roots were removed. The gums healed kindly. The submaxillary glands enlarged rapidly. First one, then the other. They were lanced, and pus escaped. There was again a short respite, during which he was able to attend to business. There was a profuse flow of saliva, which had but little odour. After the 1st of August he was unable to articulate, and lost to a great extent the use of tongue and lower jaw. The discharge from the submaxillary glands was now continuous and offensive. The dressings were of carbolized oakum, changed three times a day. For some time he lived entirely on liquids; latterly on very small quantities of milk and brandy. He died about October first, from exhaustion. At the time of his death, the tissues had sloughed from the left side of the neck, from the margin of the jaw nearly to the clavicle, exposing the muscles, which were in some parts cleanly separated. The external carotid artery could be raised on the finger, and each pulsation seen and felt. The sterno-mastoid muscle could also be raised on the finger. The salivary glands were destroyed, and the floor of the mouth had sloughed out. The pharynx and upper portion of the trachea were visible, and all the glands of the neck were much enlarged. All this, says Dr. Jenison, of Washington, resulted from improper treatment, and the subsequent neglect of the patient.

Iodide of Potassium for Frontal Headache.—Iodide of potassium in two grains doses in a wine glass of water is reputed a rapid cure for dull frontal headache.

Failing this a like quantity of the Ammonium iodide, with Sp. Ammon. aromat. m.x. may succeed.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the Publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against one another. All makers, vendors, and inventors, ore invited, with strict impartialisy, to contribute towards this end.

MELLIN'S FOOD FOR INFANTS AND INVALIDS

This food stands high when compared with the many so-called foods for children which crowd the market.

It is the commonest mistake to force starchy foods upon children long before the starch assimilative function is in working order, and so the food before us fulfils a most useful function in supplying dextrose and maltose ready formed, and in a shape in which a child easily assimilates them.

According to Mr. Wigner's analysis, there is 5 per cent. nitrogenous principle, and nearly 86 per cent. available hydrocarbon.

The all important phosphorus also finds a place as a good and safe food for children in suitable cases. It is palateable, and children will usually take it well.

DENTISTRY AMONG THE EGYPTIANS.—In *Enterpe,* Herodotus' second book, at the 84th paragraph, the following occurs: "The art of medicine is thus divided among them—each physician applies himself to one disease only, and not more. All places abound with physicians; some physicians are for the eyes, some for the head, *others for the teeth,* others for the parts about the abdomen, and others for internal disorders.

Every dentist should have these six things, says the Ohio State Journal of Dental Science: good abilities, good manners, a pleasant address, cleanliness, tact, a good appearance. If the Dentist's Register can boast of many such admirable Crichtons, happy indeed is England!

EXCESSIVE SNEEZING.—Dr. Quinlan recommends: ℞ Morphia Hydrochlor. gr. iv., Bismuth Oxy.-Nitr., Pulv. Tragacanth. a.a. vj. drams. To be snuffed up the nostrils every ten or five minutes.

Abstracts of Foreign Journals.

DENTAL COSMOS.—(*March.*)

"EMBRYOLOGY: with special reference to the Development of the Teeth and Contiguous Parts," by J. L. Williams, New Haven, Conn.

(*Continued from p.* 224.)

This contribution is mainly occupied in showing the varying functions of protoplasm. The mouth is shown to be formed by an invagination of the upper layer or epiblast, and the teeth are taken as springing from the epiblast which covers the mucous membrane. We are then told that the author has views of his own concerning the development of teeth, but what these are has yet to appear.

"RADICAL AND HEROIC TREATMENT of Alveolar Abscess by Amputation of Roots of Teeth," by J. N. Farrar, M.D., D.D.S., New York City.

(*Continued from p.* 226.)

Cases when there is extensive separation of the gum from the root, and falling away of the adjacent wall of the socket and surrounding external alveolar tissues, with discharge of pus along the outside of the root of the tooth, and the formation of pouches in which the food collects, require amputation of the roots. Such a course is the best and safest to adopt. In other cases, although there is destruction of the apical portion of the socket walls and surrounding regions of the cancellated structure, the outer plate of the alveolar process remains intact—then the method to be followed presents more difficulty. Abscesses, recent or not, if limited in size, may be cured by syringing. When large and ragged, accompanied with necrosis, with degenerated roots projecting into the cavity, amputation of the root should be practised, both because it remedies the condition, and because it facilitates the removal of the necrosed bone. In doubtful cases, syringing may be practised at first, amputation being practised later on if necessary. Amputation is an operation requiring both an exact anatomical knowledge and manipulative skill. After amputation, the aperture which is left in the stump, may be plugged with common filling material. A gold screw, polished at the apical end, is introduced, then filled round with plastic material—phosphate of zinc or gutta-percha.*

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* See "Dental Cosmos," July, 1880.

When possible, the engine disk or circular saws should b used, but when these cannot be used, the screw-cut or file cut engine bur may be employed. In easily reached cases, a hole may be drilled through the root, and then a fissure drill can be passed both ways. After amputation, the sharp edges of the stump should be polished down. The writer then gives some diagrams, which explain his method of applying his cantalever thimble crowns, which are so constructed as to take the pressure from the opponent jaw, and to bridge over the chasm left between two teeth by the amputation of one between them.

DENTAL NEWS.—(*March.*)

" VULCANITE : Its Uses and Abuses."

The main objection to vulcanite may be considered to be its lack of conducting power. Red rubber is liable in some cases to become absorbed: wounds inflicted by it are little prone to heal. In the more commonly employed kinds some red precipitate is present. The colour produced is not like that of the gums, and the sulphide which collects in the cells is very injurious. Black rubber is strongly recommended as being alike more useful and more sightly.

SOUTHERN DENTAL JOURNAL.—(*March.*)

" THOUGHTS UPON SOME QUESTIONS affecting the Professional Standing of Dentists," by Dr. L. C. F. Hugo, Wash ington.

After expressing regret that there still lingered a feeling among physicians adverse to Dentists, Dr. Hugo proceeds to consider the causes: they are said to be the young men who take up Dentistry are ignorant and wholly devoid of general culture; the facility with which a "Doctor" in Dentistry is made; fees are publicly advertised; grim front windows show the Dentist's stock in trade; many who practice as Dentists lack all manipulative skill; all these charges are asserted to contain more or less truth, and it is urged that if the relations between Dentist and physician are to become less strained such things must undergo a radical change.

" THE RUBBER QUESTION," by Mrs. M. W. J.

Rubber disease, we are reminded, is a disease which was much talked of in days gone by. In the present paper it is to be carefully described. Rubber was introduced as a cheap and easily manipulated material when gold and continuous gum work were practically the only materials in use—and these were too costly for general employment.

Vulcanite was soon brought into common use. When it was thought necessary to obtain a material, whose colour should approach more nearly to the natural hue of the mouth, red rubber was introduced. With this innovation began to appear the signs of "rubber disease."

(To be continued.)

DEUTSCHE MONATSSCHRIFT FÜR ZAHNHEILKUNDE.

"UPON THE SETTING OF EXTRACTED INCISORS," by Anton Witzel.

It happens some times in cases of periostial affections of the incisors, that the latter have to be extracted. The apertures which the extraction leaves hinder speech and cause other inconveniences, and generally make the patient seek the aid of artificial teeth. The tooth can be fixed in several ways; generally by a caoutchouc plate. What destruction is caused among existing teeth by this means has been shown by a writer upon setting of artificial crowns in anti-septically filled roots. Through acid fermentations the neck of the tooth which touches the caoutchouc plate becomes very soon carious. This can be remedied by not allowing the caoutchouc to touch the neck of the tooth, and fixing it by broad gold bands. But simpler and better is the following method:

The artificial tooth is placed, as in the caoutchouc setting, on the gum and a protecting plate is used; round the two neighbouring teeth bands are made out of thin gold wire. Both bands are bound with a gold band of thin gold plate which lies on the gum. The tooth is then soldered in the usual way on the gold band. The bands must almost surround the tooth to give it sufficient support. A tooth fixed in this way offers the following advantages: First, the caoutchouc plate is avoided; second, the articulation is not hindered and the tooth can always be worn and cleansed while in the mouth. There are often cases in which the setting of an extracted tooth next to a pivot tooth is necessary, generally a caoutchouc or gold plate is prepared on which the missing teeth are fixed. The following setting is more practical.

The root is prepared for the reception of a pivot tooth, an impression taken round which soft stents mass lies, the model pierced and a piece of gold plate stamped, which covers the root and the gum, over the alveolars of the extracted tooth. Then two gold bands are bent round the hollows of the neighbouring teeth, the root, pivot, and the bands soldered on the gold band. The artificial teeth, provided with protecting plates, are fixed in the usual way. Of the many different methods of setting extracted teeth this is by far the best.

DEUTSCHE MONATTSCHRIFT FÜR ZAHNHEILKUNDE.

"Treatment for the Cutting of Wisdom Teeth." (By E. Ackermann, of Mulhausen.)

There are two causes which produce annoyance in the cutting of the lower wisdom tooth, first, the want of room, which causes a swelling; second, the crushing of the swelling from the opposite upper teeth. The first precaution to which attention should be directed is to prevent the crushing in the soft part of the mouth, and thereby to obviate the first and most important symptom of disease—gingivitis. As a means of cure, incision of the substance of the gum is often had recourse to. It has been found that simple incision is more irritating than useful, it has been found better to cut off a great part of the swelling with scissors, since after the loss of blood thereby obtained, in slight cases the inflammation goes down in a few days. But in severe cases this does not always succeed, and the crushing of the swelling often continues. For such cases Ackermann prepares a capping of caoutchouc, for the lower row of teeth, and causes it to be worn a long time. This compels the upper teeth to bite on the caoutchouc. This treatment has not before been spoken of. By this means the discomfort of chewing immediately ceases, and the appearance of inflammation immediately goes down. First, an impression of the lower teeth must be obtained on the plaster casting, a capping in wax or gutta-percha, must be modelled, and for its better appearance the front part cut narrower. In some cases such a provisional guttapercha capping is sufficient, but if it is required to remain in the mouth for some length of time, it must be made in caoutchouc. With such an over-capping the patient soon learns to chew easily. It should be worn for two weeks, and then gradually cut narrower and narrower till the swellings having quite gone down, the capping is taken away. It is most difficult to get a satisfactory impression of the lower jaw in cases of compression of the jaw, but this may be obtained by the patient wearing wooden wedges in the mouth between the rows of teeth. These should be worn particularly at night, and to prevent their slipping into the throat, might be fastened to a button of the dress. These wedges should be changed for a larger size until it is possible to get an impression, and then a caoutchouc capping can be used. Through the use of the caoutchouc capping the appearances of inflammation disappear, the wisdom tooth finds gradually sufficient room in the jaw. In earlier methods of treatment, too much stress has been laid on increasing the space without regard to the fundamental cause of trouble—the pressure of the upper teeth upon the swellings. It was found after the extraction of the wisdom tooth, the second molar had to be extracted as well. Since Ackermann has used the caoutchouc he has never found it necessary to extract the second molar.

Literary Notices and Selections.

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

By J. William White, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

(*Continued from p.* 423.)

Let us begin with the molars. An essential point should first be specified. In the class of molars there is but one tooth on which the influence of hereditary syphilis shows itself, and that is the first molar. We will confine ourselves at present to the mere statement the explanation of which will occupy us later on. Here the mlaformation consists in a true atrophy of the cusps of the tooth (the " cuspidien atrophy " of Parrot). The body of the tooth for two-thirds or three-fourths of its height, is in a normal condition ; but its upper segment on the contrary, is lessened in all of its diameters—atrophied, eaten, as it were ; separated by a circular furrow, as though it were set in it. At first sight one would say it was a small tooth growing out of a larger one or better still, " a stump of dentine emerging from a normal crown " (Magitot). If we examine it more closely, we notice that the masticating surface of the tooth, instead of being neatly divided in a series of tubercles or cusps separating the undulated depressions, presents an irregular appearance, bristling with roughened elevations, granular or acuminate, filled with sinuosities, more or less deep, some of which penetrate to the dentine. Furthermore, this surface, in place of the pearl-like color which distinguishes the normal tooth, has a dirty yellow or brown tint. This appearance is that of the lesion as observed in infancy. But in time it is entirely transformed. Under the influence of mastication the grinding surface, abnormally constituted and partially deprived of enamel, wears away, and there remains a tooth doubly remarkable. First, because it is notably shortened ; second, because it ends in an absolutely flat surface—a true *plateau*, with a yellowish center and a peripheral border of white enamel. This short and flat tooth has a diagnostic significance of the highest value.

Upon the cuspids, the erosion of the free edge shows itself in one or other of the two following varieties : First, as a simple notch of the cusp in a V-shaped form, similar to the cut made in a piece of wood by two convergent strokes of a knife ; second, as a true atrophy of the free edge, which undergoes a marked circular cutting-out, and is reduced to a slender conical stump, which appears as if set in the body of the tooth, or as if "hafted in a cylindrical ferrule" (Parrot).

In the case of the incisors, the varieties are more numerous. It is necessary to recognise at least five. A few words will suffice to describe them. The first consists of an angular notch, identical to that which I have just described to you in relation to the cuspids. It is a cut, more or less irregular, into the free border of the tooth. The second consists in the notching of the free edge, which is formed of a series of small pointed projections, separated one from the other by a corresponding number of depressions. This is what is termed "saw-like" teeth. The third is characterized by atrophic thinning of the free edge, with antero-posterior flattening. Imagine a wax tooth to have been compressed and flattened at its free extremity by the jaws of a pair of pincers, and you will have the exact representation of this variety. The cutting edge of the tooth affected in this manner is diminished in thickness; flattened from before backwards; sometimes even reduced to a simple plate. It is, furthermore, unequal, irregular, rough, filled with transverse or vertical depressions. Its color is changed,—yellow or gray, indeed nearly black in some places. In some cases the thinning of the cutting edge becomes excessive. In a case of M. Lailler's, the free edge of a superior incisor was reduced to the thickness of two millimeters, in the condition of a simple scale of extreme thinness, to be compared to a thick sheet of paper. It is needless to say that a tooth affected in this manner is weak, friable, and easily worn or broken. At other times the appearance of the lesion is is somewhat modified. The cutting edge of the tooth is not only thin,—it is irregular, as if folded, covered with vertical furrows. In a case recently observed, the two upper central incisors were as if wrinkled at the free edge, being thin, sinuous, and divided at half their height by quite a deep furrow. The fourth form reproduces the generel atrophy of the free edge which I have described in reference to the cuspids and molars. The tooth offers a normal base but is suddenly constricted within a few millimeters of its free edge by a circular furrow, from which emerges a small rough stump, with an uneven surface and of a dirty color,—gray or yellow.

Fifth, and finally, we come to a special type, about which there has been much discussion during the past two years. I speak of the erosion with the semi-lunar notch; also called crescent-shaped, or cresentic notch. It is that which more recently has been called "Hutchinson's tooth" truly a legitamate name, since Hutchinson has the merit of having first described this dental malformation and recognized its pathological significance. A full description of this tooth is necessary, because of its importance.

The lesion designated under the name of "Hutchinson's tooth" consists in one important characteristic, to which may or may not be added different accessary ones. The important characteristic consists of a semi-circular cut in the free edge of the tooth. This cut is well marked in the typical form of the lesion. It encroaches upon the free edge of the tooth, following a curved line, regularly and most gracefully arched, the convexity of which is towards the neck of the tooth, in such a manner that this free edge forms a crescent. The superior central incisors are the seat of prefence *par excellence* for this crescentic notch, which by its shape and seat offers itself as a special lesion, having its own inviduality. There is no other dental lesion which can be compared to it. Likewise, from a purely clinical point of view, it has its own peculiar features, which exclude all risk of confusion. It asserts itself, one might say, at first sight. It is impossible to mistake it, or seriously to consider it in connection with any other affection of the dental organs. That which objectively resembles it most is the wearing away of the dental substance caused by a pipe-stem. This also assumes a cresentic shape; but the wearing away caused by the pipe is slight except in the space between two teeth, and not on a single tooth; it is never observed on the central incisors, for the good reason that a pipe is held to one side and not in front; it is never so regular as the notch of Hutchinson, which has its center of curve corresponding in a mathematical manner to the axis of the tooth, etc. A tooth accidentally broken would not be mistaken for a "Hutchinson tooth," for a fracture is irregular and never assumes a cresentic shape.

The crescentic notch is the essential characteristic of the Hutchinson tooth; but it is not the exclusive one. There is frequently added one or other of the following peculiarities, which all, in different degrees, are worthy of attention. The dental notch is nearly always bevelved at the expense of its anterior edge. In other words, the anterior border of the crescentic arch is cut obliquely from above downwards, and from before backwards, as if a chip had been detached from this edge by a cutting instrument,—an insignificant detail apparently, but really an important one, whose special interest we will notice later. The Hutchinson tooth is oftenest noticeable by its rounded angles. In the normal condition the lateral border of an upper central incisor form with its inferior edge very sharp angles. Here, on the contrary, there is no angle, no sharp edge; the sides unite with the inferior border by a curved line. Often the Hutchinson tooth is very much reduced in length. This characteristic of shortness is very striking in some patients. Sometimes, also, it is a narow tooth having a transverse diameter below the average. You are aware that the normal characteristic of the upper central incisors is a greater transverse diameter than that of the laterals. In the Hutchinson type of tooth it sometimes happens that they are not so wide as the latter. It is not uncommon,—and this is a point upon which the English writers have particularly insisted,—for the Hutchinson tooth to take upon itself the so-called "screw-driver" shape—that is to say, to show itself broader on a level with its neck than at its free edge. This configuration—the opposite of the normal shape—recalls very accurately the shape of that well-known tool, the screw-driver. Finally, the upper central incisors having the Hutchinson notch also deviate frequently from normality in direction, and in place of having their vertical axes parallel, they are inclined toward each other—obliquely convergent.

The features which I have just described constitute the perfect type of the Hutchinson tooth, and are best observed in youth. But this type is far from being unchangeable. It offers, to begin with, differences of degree—that is to say, it is more or less marked, according to the case. Moreover, it presents modifications at different ages; and this is of the greatest importance, as we shall see. In the first place, the Hutchinson tooth does not protrude from the gum with the clearly-cut notch which I have previously described. At the beginning this notch presents itself, either filled, or in part occupied with small, apparently atrophied vegetations of the dental tissue. The curve of the arch bristles with these productions, in the form of little spines—serrations—resembling the teeth of a fine saw. Sometimes a larger lobule in the form of a truncated cone will be observed at the top of the curve. These are merely the remains left by the atrophic process which the tooth has undergone at the time of its formation. Deprived of enamel, non-resisting, friable, they become blunted, wear away, break off, and are very rapidly destroyed; so that after a few years they completely disappear, leaving in their place the smooth crescentic notch.

A well-informed author estimates the number of teeth which are annually extracted in the United States at 20,000,000 and the number of artificial teeth used in the same period as 8,000,000,

TRISMUS NASCENTIUM; OR, THE LOCKJAW OF INFANTS.

Its History, Cause, Prevention, and Cure.

Illustrated by Cases and Post-mortem Examinations, with Statistical Table of Two Hundred and Twenty-nine Deaths.

By J. F. Hartigan, M.D., of Washington, D.C.

(*Continued from p.* 424.)

Dr. M. Bartram, of S. C. ("Trans. Coll. Phys. Phila.," 1793), was the first to ascribe the disease to the umbilicus, a theory, as has been seen, vaguely referred to by Moschion and Levret many years before. He said it was uniformly fatal among the infant negroes; neglect to bandage the abdomen allowed the umbilicus to become distended and puffed out, this evil being augmented by the friction of coarse cloths and the worst of dressings. "For the most part, it makes its attack with the dropping of the cord, though rarely it occurs several days after it is entirely healed; this is not surprising, when it is compared with several instances on record of tetanus in adults taking place long after the wound is cicatrized."

A. Colles, M.D. ("Dublin Hosp. Reports," vol. i., 1818), agrees with Dr. Bartram, and made about 25 dissections, with the following results:—

"The skin forming the edges of umbilical fossa was in some a little raised; on expanding with forceps the floor of this cavity was in the centre raised knob shape. A probe readily passed through it, entering the umbilical vein, the peritoneum covering which was highly vascular sometimes up to the fissure of the liver. The peritoneum covering the arteries was still more inflamed, and extended often up to the bladder. The vein, on being cut open, contained only a few small coagula; its inner surface was pale and free from inflammation, although the coats were much thickened. The arteries contained a thick yellow fluid like lymph, and their coats were thick and hard also. The peritoneal surface of umbilicus showed a soft yellow substance in the centre, resembling coagulable lymph, which formed the prominence mentioned in the external vein, the arteries generally opening into it."

S. B. Labatt, M.D., Master of the Lying-in Hospital, Dublin ("Edin. Med. and Surg. Journ," vol. xv., 1819), in reply to Dr. Colles, gives an account of nine dissections, showing that the appearances mentioned are not always present in trismus, and are sometimes found in other diseases.

Dr. J. Hancock says ("Edin. Med. and Surg. Journ.," vol. xxxv., 1831): "The chief and essential cause of trismus is an irritative impression made on the nervous system by the compression of the cord in tying it."

Dr. Chas. Woodworth, of Miss. ("Boston Med. and Surg. Journ.," vol. v., 1832), reports a fatal case which he thought was produced by irritation in the intestinal canal.

Dr. Von Busch "Neue Zeits. für Geburts.," vol. v., 1837) says that the disease, according to his experience, always occurs after the cord has dropped off, and not later than the tenth day after birth. In no case had he found suppuration or inflammation externally, and in his new observations of arterial inflammations, the same was seated far distant from the navel. Diffuse peritonitis was found apparently originating at the posterior wall of the bladder. The arteries showed bulbous swellings, the thickness of a goose-quill, and half an inch long. A dense deposit of fibrin, in a sheath-like form, was found between the outer and middle coats, and in the lumin black-looking thrombi. A sound could be introduced from the navel to the arteries up to the swelling. Below they were open to their continuation in the hypogastric. Nothing abnormal about the umbilical vein, but a sound was introduced its whole length also. From his observations, he believes the disease, in most cases, due to this inflammation of the umbilical arteries, possibly produced by the entrance of air.

Dr. C. E. Levy, of Copenhagen ("Neue. f. Geburt.," vol. vii., 1839), agrees with Von Busch that inflammation of the umbilical arteries is the cause of the disease. In five of six autopsies which he made, there was also hyperæmia of the brain. In three, extravasation outside the spinal dura mater. In one, unusual injection of arachnoid spinalis. He adds that the spinal extravasation was a post-mortem accident, and attaches less importance to hyperæmia as a cause of the disease.

J. Matuszynski ("Gaz. Méd., Paris," vol. v., 1837) gives the result of twenty autopsies, made with the greatest care, by Dr. Finckh as follows:—

"The bodies were covered with linen, wet with vinegar and laid on the belly, so as to prevent infiltration of blood in independent parts. Most were made thirty.six hours after death, some four to six hours. Around the umbilicus was generally perceived areola of bluish-green colour. In sixteen case of spine examination, there was abundant effusion of black blood all along the canal, in the space between the dura mater and the canal; sometimes it was limited to cervical or dorsal regions, sometimes extravasation of serum irregular in location. The dura mater and arachnoid were generally healthy; pia mater almost constantly injected, sometimes thickened. The cord was reddened twice, once was softened, once appeared indurated. All the rest of cases normal. Exudation of blood in cranium, preferably in sub-arachnoid tissue or ventricles; in one case lymph was found, sometimes serum in ventricles. The brain in two cases was firmer than usual, in others softened. Nothing worthy of note in abdomen or chest. Umbilical vein and arteries were scrupulously examined, and presented no sensible alteration."

Dr. Schneemann says ("Hann. Ann für die ges. Heilk.," vol. v., 1840), "That want of oxidation of the blood has much to do with producing it; and this is favoured by too rapid tying of the pulsating cord, or by placing the child under the bedclothes, and half suffocating it with the foul odours between the sheets of a puerperal woman."

Prof. P. G. Cederschjöld ("Neue Zeitsch. fur Geb.," vol. x., 1841) states, that 42 children treated in the general lying-in house at Stockholm, in 1834, were seized within five months, 34 of whom died. In order to discover its origin, certain meteorological observations were made. After describing them, Prof. Cederschjöld remarks:—

"It appears very probable that the unusually long-continued bad weather mentioned caused not only the many cases of the disease, but created an epidemic which continued long after these atmospheric causes had ceased to exist. It is strange that the disease, as far as I know, did not show itself during this time in the dwellings of the city, or elsewhere, except in the lying-in house.*

"Post mortems showed congestion of vessels, sinuses, and membranes of brain; the distension greatest at the base with extravasation. Spinal cord showed a like condition. The heart and its great vessels were congested; lungs also, and generally collapsed. Liver occasionally congested. Of all in whom the disease was fully developed, not one was saved. Those reported as cured only show the prodromes, and these are not at all positive, it is possible that many of these children would not have had the disease at all."

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* Dr. Busch, who translates the article, here makes the following note:—"This circumstance appears to me to speak against the assumption of the authorh ta weather changes produce the disease, and it may be assumed that local causes, or harmful influences existing in the institution, had probably more to do with its appearance."

In the "New Orleans Med. and Surg. Journal," vol. ii., 1845-6, Dr. Wooten remarks: "I have usually observed the first symptoms to make their appearance about the time the umbilical cord comes away, and from this I at first supposed that it was the effect of awkwardness in dressing the navel by the ignorant midwives who usually attend on the plantations, but careful investigation led to nothing conclusive on this point." In the same number the editor invites communications on the subject, because of the alarming mortality at that period, numbering one hundred and fifty annually in New Orleans.

(*To be continued.*

Dental News.

MIDLAND ODONTOLOGICAL SOCIETY.

The Second General Meeting of the Members of the above Society was held on Thursday Evening, the 1st May, at the Medical Institute, Edmund Street, Birmingham. The president, Mr. Thomas Howkins, occupied the chair, and there were present, Messrs. Adams-Parker, Vickers, T. Dixon Miller (hon. treasurer), W. J. Watson (hon. sec.), R. Owen, Dr. Fredk. Dally, J. W. Roberts, E. Roberts, Harry Owen, F. J. Sims, John Meanley, W. E. Ganny.

After the transaction of some formal business Mr. Adams-Parker read a paper* on the subject "The Treatment of the Mouth previous to inserting Artificial Teeth."

Mr. R. Owen opened the discussion, remarking that he regarded the paper as a very excellent one, while the subject was of the greatest importance; he only regretted there were not more junior members present to have listened to the learned remarks. But like any other young society they must start with a little. In regard to the remarks contained in the paper about the stumps and loose teeth being taken out or retained he considered that much depended entirely on the surgical knowledge of the individual practitioner. Day after day he was impressed with the importance of the subject being deeply taken into consideration. If they were to do always just what the patient requires they would be doing a great injustice. The patient was not capable of judging what was best, and frequently wanted the practitioner to do what would result in bad work. As honest practitioners they ought to look to the features of the patient and take into account the structure of the mouth from a surgical aspect. As Mr. Adams-Parker had truly said very much depended on the success with which the mouth was first prepared. The principal difficulty was, that the patient would not always allow the practitioner to do what he wanted; they were very much disposed, generally speaking, to have everything done with as little pain as possible. There was very little of the pluck in the people of the present day which was said to have existed in the past. The patient, when the mouth was touched, was generally on the *qui vive*, and would exclaim: "Leave it alone, I can't have that done at all." Practitioners did much injustice to their patients by giving way to such ideas. They ought to do their duty honestly, and endeavour to do their work properly, having regard of course to the health and general condition of the patient to be operated upon. Of course some people gave a good deal of trouble, their nervous organism being so delicate, that on the eve of having a tooth taken out would throw themselves into a serious state of depression. He too, experienced an example of that only the other day. There were times, however, when they must not allow such a kind of thing for the work to be done some way or other. It very much depends on the practitioner himself who must determine what he is going to do; if they were determined to make a good case, they must first have a good foundation. A great consideration was the question of sentiment. Many persons came to them in a low condition of health, and the question was, whether a medical man should be called to prescribe, or whether the dentist should take the case entirely into his own hands. He considered that every man who followed a certain profession ought to have sufficient knowledge to take in hand anything that profession demanded, even to the medical treatment of the patient, so far as it has any connection with the mouth. He considered they ought to be able to do anything required in that respect. Of course they had this difficulty, that in their profession they had not had the opportunity of being medically taught. He hoped before long to see a connection between their profession and that of the medical surgery, so that they may be enabled to treat a case, whether it has reference to neuralgia, or to the delicate state of the person at the time being. With respect to wholesale extraction, he found that were this was done, that many people were disposed to hæmorrhage, and there was a risk of this when many teeth were taken out at once. In his opinion it was a good plan to take out the molars first, and the incisors last, with an interval of about a week. This plan he had adopted in temporary cases. He believed where there was to be an extensive preparation of the mouth, it was absolutely necessary, in order to produce a lasting work, that temporary cure should be largely used. Another question they had to consider was, the amount of fee. Like the butcher and the baker, they must consider the question of price, and the means of the patient. If they wanted people to appreciate the work after it was done, he believed it was a very essential thing to the result that temporary cases should be first put in. He quite agreed with the remark made in the paper, that accurate impressions were absolutely necessary, and this could alone ensure the completion of a work likely to give satisfaction to the patient. Some day he hoped to give them a practical demonstration of the plan he adopted in taking plaster impressions of the mouth. It was his strong opinion that without an accurate impression of the mouth no good work could be produced. As regarded the artistic arrangement of the mouth, he found great difficulty every day of his life in dealing with the patient on this point. If they were sometimes to allow the opinion of the patient to prevail they would get some queer looking mouths some people would ask for very white teeth to be put in, when such would look anything but artistic, and would be a disgrace to the profession. He considered they were bound to consider the artistic appearance, though some people were inclined to ignore the knowledge and services of the practitioner, exclaiming that Mr. So-and-So did such a thing. He agreed with Mr. Parker-Adams that they should go in for artistic work both in regard to expression and colour. If a practitioner would only aim at good surgical work combined with good mechanical work, then the result would be a credit to the profession as a body as well as be useful to the patient who had made use of his services.

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*This paper appears at page 440 of our present issue.

Mr. Adams-Parker expressed the opinion that there were often cases in which it was necessary to consult a medical man concerning the general health of the patient.

Mr. Dixon-Miller said he heard the paper was of great interest, as it contained a good deal of sound, useful, and sensible matter. While it was being read it struck him that it was aiming at one of those high-class practices which did not seem to appertain to Birmingham. It was difficult to get their patients to realise what they ought to do and what they ought not to do, and this was owing to the information which they got through the newspapers. It certainly lay with the profession to educate the public to their own ideas, and teach them in what dentistry consisted, and in what it did not consist. The newspapers told them most unblushingly that the teeth, no matter what their condition, had need to be removed. Well, a practitioner agreed with the patient, took out the teeth, and in a little while the patient came back complaining that he would not wear the artificial set; the practitioner got sadly abused, and thus in trying to please the patient he fell grievously short of the work. How an impression which had been taken over soft and spongy gums could be expected to last any length of time, was one of those mysterious things one wondered should exist in anybody's mind. It would do the community a great deal of good to procure a few pamphlets which had been distributed in America, so that their patient's might have the benefit of the good advice contained in them. To put a set of teeth over painful and decaying teeth, or diseased, or inflamed gums, meant to a large degree that a dentist would have more regard for his pocket than for the comfort and relief of his patient. Such, however, was not their method, and he felt sure there was not one present but would be willing to give full value to the patient, and endeavour to counteract any erroneous ideas of what ought to be done. He considered it was better to remove, if possible, all the teeth at one sitting, so that the gums may tone down evenly and smoothly, and thereby facilitate the work to be aftewards done. There was a certain amount of pain in the removal of half-a-dozen teeth but if the patient was anything like manageable there was but a very little greater degree of pain by the removal of a few more, while the advantage after their romoval would be all the more pleasant. He looked upon the doctrine as good sound advice, and as far as possible, he followed it out at the present time. He agreed with Mr. Adams Parker, that it was not necessary to remove every tooth, especially if there were some healthy stumps and an absence of irritating matter, as these could be used for pivotting. This was a good plan, and one that was finding favour with American professors who even went so far as to destroy a sound tooth in order to get a hinge to hold the pivotting. The question was one well worth being taken up in a subsequent paper. Commenting on the material required to carry out the suggestions of Mr. Adams-Parker, he said it would have to be made of 18-carat gold and vulcanite, and it is not every patient who could afford to go to that expense. He was at one time with Mr. Adams-Parker on the question of temporary cures, but he was at a loss how far a patient could be made to understand what was meant by temporary teeth. The patient would probably say that the teeth got more and more loose, and that a new set ought to be made without any charge. There was no doubt they could not charge everyone alike. There were men and women in different conditions of life, and some deserved the dentist's attention at a lesser price if only because they had not the good fortune of possessing so much of this world's goods as other people. That mastication, and the general parts of the mouth can be made perfect with artificial teeth no one can well deny. Anyone with an artificial set of teeth would first exclaim that he could not manage with those things, but it should be the dentist's duty to soothe him and encourage him, and probably at the end of a week he would find the work more comfortable, and at the end of a month would wonder that he had had any complaint to make at all. If a lady came to him with black or brown teeth, she might have a set of white teeth, and it was no use going against a woman when she was determined to have her own way. She should have her teeth and he his money, and in doing so he did not think that it would be derogatory to the profession, and if anyone said he was not doing right very little explanation would, perhaps, make the matter satisfactory. People did certainly like to look young, and a nice set of properly made teeth contributed very largely to that appearance. An important matter was one of money.

(*To be continued.*)

The Summer Session of the Edinburgh Dental School opened on May 1st. with a considerable increase to its student's roll.

The number of students on the roll is eighteen, six of these having entered this May.

There is at present a vacancy on the assisstant Dental Staff of the Edinburgh Dental Hospital. Intending applicants will find particulars in our next issue.

APPOINTMENTS.

Mr. F. Sherburn, L.D.S.I., Dental Surgeon to the Leeds Public Dispensary.

Mr. Clifford Batten, L.D.S.I., Dental Surgeon to the Kidderminster Infirmary.

Mr. Henry W. Mayne, L.D.S.I., Dental Surgeon to the Plymouth Dental Dispensary.

Mr. Wm Todd Paterson, L.D.S., Eng., has been appointed House Surgeon to the National Dental Hospital, vice Mr. Chas. W. Glassington, M.R.C.S., L.D.S., resigned.

ROYAL COLLEGE OF SURGEONS EDINBURGH.—During the recent sittings of the Examiners the following gentlemen passed their first professional examination for the licence in dental surgery:—Leonard Latham Wilde, Winchester, and James Leslie Fraser, Inverness; and the following gentlemen passed their final examination, and were admitted L.D.S. Edinburgh:—James Graham Munro, New York, and Alfred Henry Thomas, Chester.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor of the "British Journal of Dental Science.

SIR,—Would Mr. White, the author of the communication on "Hardening Rubber in French Chalk," tell me what he understands by the word "French Chalk." Is it a hydrate of calcium CaO^2H^2O what we call chaux éteinte?

Would he also give me the chemical formula of steatite, a word utterly unknown to chemists of this country. Is this perhaps an anhydrous silicate of magnesium (talc) or a carbonate of lime (craie)?

I am, &c.,
T. WEBER, L.D.S.

Luxembourg, 6th of May, 1884.

To the Editor of the "British Journal of Dental Science."

SIR,—I should like through your journal to start a discussion on the advisability of the insertion of gold into teeth by the general practitioner, and to commence with will give my views on the matter, hoping that some of my professional brethren will give us the benefit of their experience. In order to prevent misapprehension, I will at once state that I have nothing to say against gold as a filling material if properly inserted. If the gold is packed accurately against all the walls of the cavity, and then perfectly finished, it is as perfect a filling as can be made; but how many dentists outside a few specialists can do this in the majority of cases? And if this can not be done are we justified in wasting both our own and our patient'stime in the attempt? There are a great many reasons why there are so few "good gold fillers," and why so many gold plugs fail. One is want of practice. It is only men having large connections who can put in their three or four gold fillings a day, which I take it is necessary in order to 'keep one's hand in." It is not every graduate who can succeed to practices of this description, or even be employed as assistant in one of them. Then even in larger practices, there are still fewer who can devote the necessary time to this kind of work, owing to its not being sufficiently well remunerated. A man, as a rule, adopts dentistry to make a living, and it is not to be expected that he will wear himself out packing gold into teeth for fees that do not equal the half of what could be earned in the same time, and much more easily by the use of plastics. (I do not allude to those who fill teeth with gold too rapidly to do it perfectly). If this is the case in the large practices, how much more in average ones where half-guinea and five shillings, are the usual fees for filling teeth? Then again, to do good work a man must be in perfect health, and how many of us are thoroughly well for two consecutive weeks, especially if in the habit of performing long operations at the dental chair. A fidgety patient will often so worry a nervous man that he can not do himself justice, and in fact the causes of non-success might be multiplied "ad infinitum." I think that results bear out my statements for what is the average duration of the majority of gold fillings? I should like to have the opinion of old practitioners on this point, but I fancy it will be found to be less than that of guttapercha, the white cements, and this is the result of bad work, which result is not from gold as a material, not from the want of ability on the part of the men, but from one and all of the above mentioned causes. In the face of this are we justified in fatiguing our patients by the long sittings necessary for gold? In receiving higher fees than for other fittings and in spending a good part of our lives in doing work, the result of which is not equal to the time, labour and expense bestowed on it. I am, &c., UTILITY.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

FROM APRIL 1ST TO APRIL 30TH, 1884.

Extractions	Children under 14	451
	Adults	838
	Under Nitrous Oxide	449
Gold Stoppings		133
White Foil ditto		3
Plastic ditto		449
Irregularities of the Teeth treated mechanically		93
Miscellaneous Cases		233
Advice Cases		97
Total		2746

HARRY L. PILLIN, *House Surgeon.*

JOURNALS RECEIVED.

Lancet, British Medical Journal, Dental Record, Independent Practitioner, Archives of Dentristy, Progress Denbaire, L'Art Dentaire, Revue Odontologique der Bruselles, Monattschrift des Veins, Deutscher Zahunkünstler, Dental Practioner, Jodoform in Dental Surgery (Dr. Boedecker), Ohio State Journal of Dental Scienee

British Journal of Dental Science.

No. 393. LONDON JUNE 2, 1814. Vol. XXVIII.

THE DIETETIC TREATMENT OF DENTAL DECAY.

By Dr. Price, Birmingham.*

At a meeting of the Midland Odontological Society, the conservation of dental tissue, by the aid of "Silicated Phosphates," formed the very interesting subject for a paper and discussion. The president and author of the paper are of opinion that either in the form of whole-meal bread, brown bread, or oatmeal, caries may be, if not repaired at least arrested; and defective teeth saved in a state of usefulness for years. The onus of dietary rules is, by these gentlemen, thrown entirely on the mothers, so that while *in utero* the phosphates may be supplied for the formation of the teeth. Mr. Howkins, however, is of opinion that the second set could scarcely be benefited by the mother's regimen, or during lactation; and quoted the authority of John Hunter on the subject. Now I am an advocate for the foods given above, not as agents for *forming secondary* dentine, but because they contain a larger percentage of nutriment, and of a kind more likely to form both *in utero*, and after birth more perfect teeth than ordinary white-bread. But if the full value of these, or any other benefits are to be secured to the offspring, not only the mothers, but the *fathers* of the children must be taught the value of the foods recommended. The child is a modified reproduction of the structures of both its parents, and temperance, and dietary precautions will avail but little if practised by one, but neglected by the other. But is secondary dentine ever formed? Teeth decay, and either from the intervention of dental skill, or a change in the vital condition of the person, the decay may be arrested, but this is not the formation of new tissue. In the typical case cited by Mr. Owen of a patient with caries arrested consequent on a free life in the woods of America, the decay was only stayed, and no effort was made by nature to repair the loss. For the past fifteen years I have examined very carefully every mouth, and every tooth I have had for treatment for the purpose of finding any indication that nature under any circumstances puts forth any effort to lost structure, and my opinion, founded upon these observations, is that tissue once lost, is lost for ever, neither nature nor art being able to replace it. But if it be granted that the embryonic tooth germs of the milk set are influenced directly by the food of the mother, and also that the second set are strong in proportion to the physical structure of the person, it must also be conceded that indirectly, if not directly, the well-being of the permanent teeth is conditional on the health and regimen of the parents. Diet, then, though unable to renew lost tooth substance, is extremely valuable, because from proper foods, healthier, stronger children will be born and reared; but in order that these expectations may be realised, both parents must participate in the dietary regulations.

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*Read before the Midland Odontological Society.

In the same paper, Mr. Owen gives it as his opinion that degeneracy of tooth structure is owing to "That conventional life which compels everybody to live, as it were, to please his neighbour—to vie with each other in the ornamental part of life, and this means waste and wear of physical life and health &c." Now while admitting that the strain—"The battle of life" is severe, yet I am far from admitting that it is the most potent agent in lessening physical well-being, or in causing the onset of tooth disease. Emulation, the desire to please one's neighbours, lead to healthful exertion, self-reliance, the comforts of home, and provision for the emergencies of life. These are not the faults that lower stamina, but those sins we would concede from our neighbours, and of which we are always ashamed. Intemperance, prostitution, venereal disease, &c. are the plagues that are wasting away the strength, eating away the vitality of every civilized people. In the past, too, the practice of bleeding, and administering such immense quantities of mercury must be credited with a large share in the work of lowering our physical condition. Besides, which, for centuries war has taken the strong and robust; and an exalted civilization, and setting aside and over-ruling the natural law of the *fittest*, cherishes its cripples, the feeblest, and the puniest to become the stock from which succeeding generations shall be borne. We are the survivors not of the fittest, but of the weaklings nursed for generations.

The above remarks will indicate with more or less precision the causes of dental degeneration; but for the dentist, interesting as such inquiries must be, for the immediate purposes of his professional work the causes which excite caries in the teeth of his own patients, will be of the most importance. Dr. Miller taking part in the discussion, said, "Practitioners were far from unanimous as to cause of decay, and were far from unanimous how to cure it. It would be a good thing if some one would discover a means to arrest decay, even if there were no building up of new material after." Quite true. We are unable often, in teeth of the utmost importance to stay the destroying agent, and the only cure is the extraction of the teeth. It is humiliating to confess, but the confession of our wants marks the direction of enquiry and experiment to meet them. The cause of decay, after what has been said of original defective structure, may be enumerated,—as unfair usage of the teeth, want of cleanliness, and a foul stomach. Probably the onset of disease in dental structure, in every instance, is caused by the chipping or fracture of the enamel. Teeth, originally very frail, and requiring the greatest care, are used badly, and neglected as though the object was to destroy them. A small fragment of bone, hard crust of bread, shot in game, holding a pipe, biting cotton, &c., in adults; and cracking nuts, and the thousand and one duties the teeth have to perform in youth, may be cited as some of the means employed to injure the enamel. Once the enamel is injured the dentine is attacked, both by filth in the mouth and by disordered stomach. Hence the necessity of cleansing the teeth, and the importance to them of the general health. In America the subject of tooth powders and tooth picks are often under discussion, by the members of the dental organization, but in England dentists seem to think the subject beneath notice, and relegate these matters to the chemists and patent medicine makers, and thus neglect one of the most important matters in conservative dentistry. The spaces between the teeth should be cleansed with floss silk, quill, or thread, and the teeth should be brushed daily with a suitable powder. Any dentist, having the case of a mouth that is neglected, may test the utility of these precautions, not to mention the comfort, by comparing it with another when care is taken, and cleanliness practised. Saponaceous dentrifices have been recommended by the profession, but my own preference is for a simple powder, containing by weight about the one-fourth of bi-carbonate of soda. The teeth should be brushed not scoured, and every practitioner should make it part of his daily work to instruct patients how to perform the operations, and to guard them against tooth pastes, and other inferior compounds. And as regards the stomach, every observant operator must be alive to the fact that if that important organ be deranged, the teeth are certain to suffer. During pregnancy tooth-ache and the loss of teeth from decay are so general as to be facts known and commented upon by the laity, while from that state of the mouth, termed "furred from the heat of the stomach," rapid disintegration takes place, and can be arrested by restoring that organ to a normal condition. Violent tooth-ache from this cause—dirty mouth—is nearly always cured by a strong saline purge, and patients will tell you that while they are suffering, rapid decay goes on, but after taking the remedy mentioned, it is stopped; but will of course be resumed again and again as the stomach gets out of order.

The public require educating. By pamphlets, lectures, in the surgery, *from the house tops*, people should be taught that healthy children, strong in body, and who will have teeth capable of preparing food for digestion for the body's support, can only be born of parents, *fathers* and *mothers* whose own bodies are in health, and properly nourished, that during pregnancy the mother's strength should be supported, not by stimulants, but by the foods mentioned above, and that during lactation nothing can be more prejudicial to the future well-being of her offspring than the practice, far too common, of making milk of common beer. And let them with equal persistency be taught that a dirty mouth whether from foul stomach or neglect is ruin to dental structures, and that cleanliness and care will save even frail teeth in a state of usefulness for many years. The dentist should educate. The public run to the surgeon or chemist, but through ignorance, knock at the dentist's door with reluctance; and from prejudice consult a surgeon or chemist in cases where they are unable to give relief, and when the dentist is in a position to give the advice or perform the operation required.

THE TREATMENT AND PREPARATION OF THE MOUTH PREPARATORY TO INSERTING ARTIFICIAL DENTURES.*

By Samuel Adams-Parker, L.D.S., Eng.

Concluded from page 444.

Let me guard against any misconception in the remarks I have made respecting the removal of teeth, and stumps, previous to inserting artificial substitutes. I am only too glad to find such in a healthy condition, and sound stumps are particularly valuable, and essentially necessary at times, in pivotting cases, thereby avoiding clasps round the natural teeth as much as possible. I have always advocated the retention of such organs in the mouth as are in no way a hindrance to the perfect adaptation of the artificial case to the mouth so as to insure comfort and utility.

It will not be out of place here to make one more reference to the remarks of Dr. Richardson:—

" It rarely happens that all the structures of the mouth are in such a condition as will render it proper to insert artificial teeth without some preparatory treatment. This important requirement cannot in any material respect be disregarded by the practitioner without endangering the usefulness and permanence of the substitute, and inflicting upon the patient a train of consequences alike distressing and pernicious. Every experienced dentist is familiar with the fact that an artificial substitute resting upon diseased roots of teeth and impinging upon gums already irritable and inflamed, soon become a source not only of annoyance and discomfort to the patient, but is rendered in a degree, inefficient in the performance of some of its more important offices. There is besides, a perpetual and cumulative aggravation of the morbid conditions, and sooner or later irretrievable destruction of the remaining natural organs will be induced. These consequences cannot be wholly averted by the most skilful manipulation, but they may be greatly magnified by a defective execution of the work; or by a faulty adaptation of the appliance to the parts of the mouth."*

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* Read before the Midland Odontological Society, May 1st.

It is our lot to meet with patients almost daily, complaining of the mouth being in such a condition that mastication of the most trivial substances is performed under painful circumstances, and that the food is, so to speak, bolted, the result of such action being familiar to us all, and yet artificial teeth are daily mounted under such abnormal conditions.

The question as to the material most suitable for the construction of the base for artificial teeth would be out of place in this paper, but I find in my own experience 18-carat gold and vulcanite, either separate, or in combination to be the most serviceable, and moreover the most durable. The policy of placing in the mouth temporary cases immediately after the enamal of any of the natural organs must be left to the discretion of the dentist and the patient. We cannot always find such as are willing, or able, to incur the extra expense of a temporary set, however much it may be to their comfort and advantage. After the removal of any diseased teeth, or stumps, from the mouth, a certain amount of time must elapse before any thing can be done, even temporarily; it may be a few days, or even weeks, and during the delay the healing process may be materially hastened by some suitable astringent gargle.

"The advantages of temporary sets of teeth are unquestionable. They fulfil in a tolerable degree all the requirements of artificial teeth, under any circumstances, if we except that of mastication, this function being more or less imperfectly performed with such pieces. One of their most important offices consists in maintaining unchanged the customary relation, or closure of the jaws. Undue projection, and in many cases partial luxation of the inferior jaw, results from the loss of all of the teeth, and theseconditions may become permanent in their character, if long continued."† When temporary cases are inserted and answer all the requirements originally intended by them, they should be worn just so long, or I should rather say, that the healing process going on under them should be allowed to proceed so far, that there is little or no chance of any future disturbance taking place: this may extend over several months, even so long as two years or more have been known to elapse before a complete state of solidity, if I might so term it, has been established in the gums, for the safe and satisfactory arrangement of a permanent set.

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*Richardson on Dental Mechanics.

There is one more subject that I should wish to call your attention to, and although it occupies a position at the end of my paper, is of so much importance that I should consider the object of my address incomplete if I did not refer to it.

We will take it for granted that an accurate impression of the mouth has been obtained, and all the various stages manipulated in a satisfactory manner up to the time for selecting and arranging the teeth; when, by the improper employment of one tooth, or of several teeth, as the case may be, whether as to the colour, size, distribution, or shape, will often be destroyed the natural character and features of the patient.

I would strongly impress upon all to make it a point of first importance when arranging for a complete set of teeth, to take into consideration the general character, age, and appearance of the patient, in fact every minute detail that may assist in restoring the parts as closely as possible, to what they were previous to the loss of the natural organs. Adopting a practice recommended some few years ago by an American dentist whose name I forget at the present moment, I frequently hold my patients in short conversations, to obtain the natural expression of the face, and by this means gain an amount of assistance in carrying out artistically, what may be required to be executed in the laboratory, that cannot be obtained otherwise, and with far greater accuracy.

By such conversation also I can elicit from the patient the general early characteristics of the teeth, as to their regularity, or irregularity, and if I find from such conversation that one or more of the anterior teeth had originally any peculiar conformation, not resulting in disfigurement, I should not hesitate for one moment in carrying out the same arrangement with the artificial set, so that between the early natural teeth and the artificial substitute, little or no distinction should exist. The time elapsing between the loss of the natural teeth, and the fitting in of an Artificial set, may perhaps be so long that all previous knowledge of the earlier characteristics of the former may have been lost sight of, and the dentist in such cases will have to exercise his own judgment and artistic skill.

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†Richardson, Mechanical Dentist.

How often is it our lot to see in the mouths of those advanced in years, artificial teeth that are totally unsuited to them, frequently on account of their beautiful colour and great regularity. It cannot be natural to place in the mouth of any one, say 60 years of age, teeth, that are appropriate and ought to be in those of 18 and 20 years of age, detection is certain, instead of being impossible : dental art is debased, and that becomes a mere manufacturing process, which ought to be a scientific undertaking.

The following eloquent passage from a valedictory delivered some years since by Dr. Dwinille, of Ohio Dental College, bearing upon this subject shall conclude my remarks. He says, it is one of the legitimate duties of our art to study the beautiful in form, expression, harmony, colour, and effect, symmetry, and keeping the balance and relations of combinations in the mechanical and corrective departments.

No clay in the hands of the artist was ever more subject to his control, than are the varying expressions of the mouth and its surroundings, subject to the controlling influences of our art, which become in a large sense akin to that of sculpture. The mouth, the most interesting and important of all the features, where intelligence in silent expression sits enthroned, where character leaves its impress, and where the heart, and its affections, find a voiceless utterance. In supplying a complete denture you can make the mouth agreeable or forbidding, restore the lost individual expression, the lost beauty and inviting grace, or make it incongruous, inharmonious and repulsive. If we were responsible for the discordant and unhappy natural expressions which disfigure the countenances of those we occasionally meet, how fearful it would be, and yet there are many in our profession, who, through ignorance or want of artistic feelings, or a proper appreciation of the above elements, have gone deliberately to work and constructed just such artificial deformities, causing a man to misrepresent his own character and disposition; and placing in his mouth a continual libel upon himself.

[In the first portion of this paper, page 441, for artifical read artificial. Page 442, seventeen lines from bottom, for becomes read become, and five lines from bottom, for disgusting read disgusting. Ed.]

ON THE RESTORATION OF BADLY DECAYED TEETH WITH PLASTIC FILLINGS.

By J. Morley Dennis,

DENTAL SURGEON TO THE GRIMSBY AND DISTRICT HOSPITAL.

Small fees and gold fillings are admitted to be entirely incompatible, owing to the value of the material, and the time occupied to properly insert durable fillings with either cohesive or soft gold; consequently, those whose means are insufficient to allow them the advantage of having their organs of mastication restored in this manner, must have recourse to other stoppings of a less expensive nature, and occupying less time and labour in insertion. The number of patients who may be classed under this head in a fashionable London practice are comparatively few, yet in provincial towns we find them exceedingly numerous, and many times have I been compelled to extract teeth, which, with a carefully inserted filling, would have remained useful for years, for the sole reason, that the patient would not pay the fee for an ordinary amalgam filling. This class of patients is not entirely composed of the working classes—on the contrary, many of them belong what may be termed the middle class, and only the other day I had a case of this description in which decay was going on rapidly, but the patient positively declined to have a stopping inserted, preferring to make the tooth last as long as it would, then have it cut down and an artificial substitute. In this case I believe it was entirely a matter of false economy. I have examined many patients in which the majority of the teeth in one or both jaws were in various stages of decay, some mouths being in a suppurating condition and quite offensive, and it is with these cases I propose to deal within the limits of this paper.

I have not the least hesitation in saying, that in the majority of them, sound useful teeth may be made of these offensive masses of decay, by the judicious use of antiseptic solutions, the proper treatment of the dental pulp (when that has become involved), and careful fillings, and in some cases building up with plastic fillings, so useful in teeth which the automatic mallet or other gold plugging instruments would be liable to crush. In advocating the preservation of all teeth offering a reasonable chance of success, (and I have succeeded in preserving and restoring many which I considered almost hopeless), I wish it to be distinctly understood, that I do not advise the retention of loose teeth; on the other hand, I think that all will be pretty unanimous that extraction is the best and only course to be adopted. The best plan is to advise the patient to have the mouth thoroughly put in order, instead of having one or two fillings inserted, and the remainder allowed to continue without interference. All patients will not agree to this, but I have never known one instance in which this has been done, but the greatest satisfaction has been expressed; on the other hand, where only some of the teeth are attended to, it is possible that after a time others become painful, the patient comes again and has one or two more filled, and leaves others which in due time make their existence known, and consequently the patient complains that he is always going to his dentist, and yet is seldom free from pain.

The operation may conveniently be divided into three stages.

Firstly--The preparation of the cavity.

Secondly—The treatment of sensitive portions of the tooth, including the pulp, if involved.

Thirdly—The insertion of the filling.

In order, however, that it be permanent in its character, it is desirable that each stage shall be performed as completely as it is possible under the circumstances. Every step in the operation should be perfect before a succeeding one is attempted. The instruments employed must be of a suitable form, and the filling of the best quality. If all operaters took the same care in filling with plastic materials, which is bestowed on gold, the success of the former would be far greater than it is at present; yet if the operation is more modest in character and remuneration than gold work, is it not desirable that we should strive to attain perfection, even in small things? In order that I may condense what I have to say as much as possible I will now proceed to speak of the

Preparation of the cavity.

In order to properly form the cavity, the patient must be placed in such a position as will enable the operator to get ready access to the tooth in question; this is easily managed with the aid of the improved operating chairs which are now become so necessary to our comfort and that of our patients, together with the mouth mirror, so useful in obtaining a view of the buccal and posterior surfaces of most of the teeth. When the cavity exists between adjoining teeth they must either be separated, or in the case of molar and bicuspid teeth, their adjacent sides should be cut away with the file or enamel cutter. We now proceed to clear out all softened dentine, and to so excavate and shape the cavity that the stopping may be most securely retained, making retaining points if necessary;

but it is useless going into details, as we are all acquainted with the proceedings necessary to obtain successful cavities, only I wish to impress upon all, the value of careful methodical work.

The treatment of sensitive teeth.—It is possible that in excavating, we find the dentine exceedingly sensitive, in such cases I find a piece of wool saturated with a little phénol sodique of the greatest service, which, after remaining in the cavity a few minutes, removes that difficulty, and we can proceed with our work. If the pulp is healthy and unexposed, we at once commence filling, but if on the other hand it is exposed and healthy, we protect it by capping, and if it is in a state of inflammation or other morbid condition, commence the proper treatment of it and delay filling until some future time. The details of pulp treatment are outside the objects of this communication, therefore, I shall pass on to consider

The insertion of the filling.

In making choice of the filling materials, it is well to keep in view one or two points of special interest. It must not be a conductor of heat to be of use in sensitive cavities, expansion and contraction must be reduced to a minimum, to avoid on the one hand injury to the surrounding dentine or enamel, and on the other the risk of the plug being displaced or leaking. It must also maintain its integrity when subjected to any condition in the mouth, and for anterior cavities the colour must be considered, the property of being easily worked is an advantage peculiar to plastic fillings, and most valuable in teeth, the walls of which may easily be fractured. It is difficult to find a stopping possessing all these qualities, but some possess one advantage, and others another.

For temporary fillings for protecting dressings, &c., Hills' G. P. filling is useful, while for permanent fillings in the incisors and canines the oxychloride fillings of Fletcher, Poulson or Weston will be found useful, also Jacob's permanent filling. If the rubber dam is used as for gold filling much better results will be obtained. For molars and bicuspids the above fillings are nice, if colour is the principal consideration, but are not sufficiently durable, therefore, amalgams will be of more service. I have used the gold amalgams of Davis, Nickolds, and Ash with very good results, while Sullivan's is a very useful filling for these cavities. I have entirely built up teeth with amalgam on their palatal and lingual surfaces, the filling extending in many cases from the margin of the gum to the buccal wall of the tooth, and invariably with good results—of course I made use of retaining points when necessary.

When Dr. Bonwell's system of attaching artificial crowns to the natural teeth becomes more generally known, there will be less occasion for the use of plastic fillings except as a means of attaching those crowns; nevertheless, I believe they will continue to hold their own for many years to come, as the majority of English patients will not go to the cost of the Bonwell Crown.

THE SURGICAL MECHANICAL TREATMENT OF CLEFT PALATE.*

By Mr. CAMPION.

Mr. President and Gentlemen—

Sparing you the infliction of an unnecessarily long preamble, I will merely say, that introducing for discussion to-night the subject of Cleft Palate, I propose first to allude briefly to the history of the surgical treatment, concluding with a short account of the method of performing the operation at the present day; then to refer to the history of the mechanical treatment; and finally to make a few remarks on the cases suitable for, and the advantages and disadvantages attending each method.

Cleft palate may be either congenital or accidental, and in either case it may be simple or compound, the former term being used when it implicates only the hard or soft palate, the latter when it extends through both; while in an extreme form we may find it involving the alveolar process on one or both sides of the middle line, and in these cases usually, if not invariably, associated with single or double hare-lip.

The history of the surgical treatment of cleft palate takes us back only some sixty-five years, when, about 1819, the French Surgeon Roux was the first to establish Staphyloraphy as a distinct operation and to introduce it into general practice. To him, also, must be attributed the merit of having first performed the operation successfully. His method was merely to refresh by paring the edges of the cleft, bring them together with sutures and allow them to unite by cicatrix. With slight modifications in the material for the sutures, mode of paring the edges, and such like details, the same method was followed until twenty-five years later, with the addition, however, that extra incisions were made by some with the idea of relieving the tension of the palate and so allowing the edges of the cleft to come together more easily. Mr. Alcock in 1812 performed the operation for the first time in England.

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* A Paper read before the Students' Society of Dental Hospital of London. May 12th, 1884.

But although Roux is recorded to have operated upwards of one hundred times with satisfactory success before 1842, yet the difficulties was so great, and the failures as a rule so numerous, that in 1844 Mr., afterwards Sir William Fergusson, writes "up to a recent date the results have been so unsatisfactory that I have had little confidence in recommending the operation;" nor is there any reason to be astonished at this when we consider that the methods of taking the tension off the sutures (the most important part of the operation), were founded on no definite or scientific data, but that the operaters had been in the habit of merely inflicting sundry empirical gashes upon the soft palate without reference to its anatomical relations or physiological properties, and that the after treatment of giving no food for two, three, or more days, and not even allowed to swallow their saliva, was by no means calculated to keep up their strength, nor, as more recent experience has shown, to increase in any way, the probabilities of union.

Sir Philip Crampton, in 1843, entered a protest against this starving treatment and stated that he was in the habit of allowing his patients to partake of boiled bread and milk, custard, soups and jelly twice or thrice a day, and that this in no way interfered with the union of the parts.

But the first great advance in the operation of staphyloraphy was in 1844, when Fergusson read his paper before the Medico-Chirurgical Society, in which after describing the relations and attachments of the muscles in a cleft palate he dissected, and showing that the majority of the incisions made by different surgeons with the object of relieving the tension of the parts implicate neither of the muscles causing that tension, he says, "I believe myself justified in stating that a distinct proposal founded on anatomical and physiological data has never yet been made." "I advise," he continues, "the division of the levator palati, palato-pharyngeus and palato-glossus." This is the beginning of the more rational and scientific treatment of this deformity; the foundation of the success of that operation which is now so commonly and so satisfactorily performed.

But while Fergusson had been thus improving staphyloraphy in England, Dr. Mason Warren, of Boston, had been seeking to extend the operation to closure of the cleft in the hard palate, and in 1843 published a paper in the New England quarterly journal of Medicine and Surgery, describing his method of doing this by dissecting off the soft parts from the vault of the mouth between the margins of the cleft and the alveolar processes, bringing the flaps together in the middle line, and causing them to unite as in the case of the soft palate.

This, again, is a distinct advance in the case of the deformity, a proceeding which Fergusson described as "strictly surgical," and the importance of which will be better appreciated, when we consider that it remains at the present time almost the only operation practised for closure of the cleft of the hard palate. It was first performed in England by Mr. Avery, of Charing Cross Hospital, who was the first English surgeon to attain any great measure of success in the operation. Two cases operated upon by this gentleman were brought before the Medico-Chirurgical Society in 1856 by Mr. Pollock, who first called attention to the fact that the success to be looked for is to a certain extent dependent on the arch of the palate and the length of the fissure; their being more mucous membrane available, and therefore less tension on the parts in those cases where the palate is high and the cleft long, than where the palate is low, and the fissure exists only through half its extent.

To be continued.

COMPARATIVE DENTAL PATHOLOGY.

By John Bland Sutton.,

LECTURER ON COMPARATIVE ANATOMY, ETC. CÆT., AT THE MIDLLESEX HOSPITAL MEDICAL SCHOOL.

Concluded from page 457.

CHAPTER VII.

Foreign Bodies in Teeth.

Professor Owen points out that the incisive teeth or tusks of the elephant not only surpass other teeth in size, as belonging to a quadruped so enormous, but they are the largest of all teeth in proportion to the size of the body, representing in a natural state those monstrous incisors of the rodents which are the results of accidental suppression of the wearing force of the opposite teeth.

In male Indian elephants they have been known to acquire a length of 9 feet, with a basal diameter of 8 inches, and to weigh 150 pounds. These extreme dimensions are rare in the Asiatic species. With these facts in view, and remembering the various modes in which these animals are hunted, both by civilised and savage races of mankind, and the different missiles used in the warfare, it is not surprising that now and then foreign bodies should be found in some part or other of these enormous teeth.

It is no uncommon thing to find musket balls, bullets, spear-heads, and other foreign bodies impacted in the ivory, the intruding substance being surrounded by osteo-dentine, and this in many cases without obvious breach of surface. It used to be a subject of wonder how such bodies found their way into the solid portions of the tusk without flattening of the bullet or cicatrix marking the point of ingress. The history of our knowledge on this subject is very instructive, for it serves to illustrate the way in which facts merely recorded for their curiosity later assume considerable scientific importance.

Haller refers to the circumstance of foreign bodies in teeth in his "Elementa Physiologiæ" (20).

Klockner mentions a gold ball which was found by a turner of Amsterdam in the substance of an elephant's tusk. Camper (24) mentions the case of a bullet impacted in a tusk, and remarks that it is not unusual to meet with these foreign bodies in ivory. Cuvier (23), in 1808, noticed the presence in the tusks of elephants of foreign bodies, and that the ivory outside the ball was natural, but that immediately surrounding it was irregular. He supposed the ball to penetrate the very thin bases of the tusks in young elephants, so as to enter the pulp when in a growing state, as the following passage clearly shows:—

"C'st que la balle avoit traversé l'alvéole et la base encore mince de la défense d'un jeune éléphant, et s'etoit logée dans le noyau pulpeux, encore dans tout son develloppement."

Blumenbach had a tusk of this nature in his collection, which showed traces of a cicatrix closing the entrance made by the foreign body, and deduced therefrom a property in the elephant's tusk to pour out bony matter in order to heal such wounds.

Cuvier clearly pointed out that the substance surrounding these impacted bodies differed from true ivory, and this was the keynote to the explanation of the mystery. The nature of this osteo-dentine was fully investigated by other observers; particularly Owen and Mr. Alexander Nasmyth pointed out the resemblance of this substance to that which fills the pulp cavity of the human tooth under certain conditions. In 1841, Mr. Goodsir (22) published a very interesting and comprehensive memoir on the subject, in the "Edinburgh Philosophical Transactions." He divides injuries of the tusk into three classes:—

1st. When the ball hits the free portion of the tusk, if it only penetrates to a certain part of the ivory, no change takes place.

2nd. Those cases in which the ball enters the pulp cavity through the socket and side of the tusk. The ultimate changes being, in favourable cases, the formation of osteo-dentine, the enclosure of the offending body, and obliteration of the breach in the side of the tusk. Gradually the tooth advances in the socket, and eventually the foreign body arrives at a sound portion of the tusk.

3rd. When a foreign body enters from above through the open end of the pulp chamber without wounding the tusk.

The entrance of a bullet is readily understood ; the great force by which these deadly missiles are propelled easily carries them through most animal structures, but not so with regard to spear-heads, the occurrence of which in the middle of tusks is beyond question. But Mr. Charles Tomes (25) gives a very intelligible explanation of an instance of impacted spear-head, as follows :—

"It is to be presumed that a heavily loaded spear was dropped by a native from a tree, with the intention of its entering the brain, upon the elephant as it was going to water. But in these cases the spear penetrated the open base of the growing tusk, which looks almost vertically upwards, and then the iron point appears to have broken off: this did not destroy the pulp, but the tooth continued to grow, and the iron point, measuring no less than 7½ by 1½ inches, became so completely enclosed that there was nothing upon the exterior of the tusk to indicate its presence."

The Museum of the Royal College of Surgeons contains several excellent examples of foreign bodies enclosed in elephants' tusks, and the Museum of the Odontological Society has also some good specimens of this condition—among them an example of a bullet in the molar of an elephant.

SUMMARY.

In the preceding pages an attempt has been made to collect and classify our knowledge of the "diseases of teeth" in all kinds of animals. Comparative Pathology has been little studied in this or any other country. A systematic attempt to bring about a knowledge of the "Diseases of Wild Animals" has never been made until recently. Isolated cases have been reported here and there, when the specimens seemed more than usually curious, as in the case of foreign bodies in elephants' tusks. Yet the mode by which these substances became enclosed is an exemplification, on a grand scale, of the mode by which caries is prevented in many cases from attacking the pulp in human teeth, viz., by the formation of secondary dentine, first pointed out, I believe, by Mr. Alexander Nasmyth. Also with regard to the slight mobility of the elephant's tusks, and the aberrant canines of the babirussa, allowing these teeth to take a false direction, is only an instance of the principle on which the surgeon-dentist acts in treating regulation cases.

As far as I can gather from my reading, the possibility of a tooth fractured in its socket, uniting, was put on a much surer footing by the discovery of two examples of hippopotamus teeth, in which this event had taken place beyond all cavil.

But it is with regard to caries that the true value of systematic observation stands out prominently. Every writer on dentistry points out that caries is very rarely met with in animals, and as far as my observations go this opinion is fairly correct, but it is founded on no very sure basis. No one, so far as I can learn, after diligent search, has investigated the matter with the care it deserves. Museums of Natural History are the wrong places to look for diseased teeth. I have examined hundreds of animals' skulls of this kind. Imperfection of the teeth would alone be quite sufficient, in ordinary specimens, to exclude the skull from a position on the shelves. This is well shown in Professor Flower's paper (4), who, in that large and magnificent collection of vertebrate skeletons at the College of Surgeons, found only about six examples of abnormal dentition. In the course of my investigations at the Zoological Gardens I have examined hundreds of animals of all kinds; the number of cases of caries has been very limited, so that for once systematic observation has, contrary to the general rule, substantiated a "general opinion" that caries rarely attacks the teeth of wild animals, even in the state of captivity. The whole question set forth in this paper is one that will repay careful inquiry at the hands of those who have the opportunity of investigating the question; though affections of the teeth do not, as a rule, involve issues of life and death, directly, yet they tend to make the possessors of diseased teeth, at times, some of the most miserable of mankind.

Caulk's Dental Annual has already passed through one edition, and a second one has appeared.

Amalgam, it is said, was first used in 1835, being simply filings of silver coin and mercury.

There are now over forty different methods in vogue for mounting aitifical crowns upon natural roots.

The rubber patents for dental plates cost the profession, for license and other expenses, over 10,000,000 dol. while in force.

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MONTHLY CIRCULATING EXTRACT,

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There is an authenticated circulation of from 7,000 to 8,000 copies per month, reaching between 18,000 and 20,000 English-speaking Dentists in the following manner:—On the 1st and 15th of each month the ordinary issues are sent to Subscribers, and about the 20th of each month from 4,000 to 5,000 copies of the Monthly Circulating Extract are issued and sent FREE to as many non-subscribers, and thus in rotation to every English-speaking Dentist whose name and address can be discovered, in about the proportion, per month, of 2,000 in the United Kingdom, 2,000 to 3,000 in the United States of America, the various Colonies and abroad.

It will therefore be seen that *every* Dentist, as well as all Dental Associations, Societies, Colleges, Schools, &c., receive several copies at least in the course of each year; but for the satisfaction of Advertisers and to ensure the *bonâ fides*, the circulation is certified *monthly* by the eminent firm of Accountants, Messrs. Turquand, Youngs, & Co., of London, who certify to the circulation of the London 'Daily Telegraph' and 'Standard' newspapers, &c., &c.

Every Advertisement received for a year's insertion will, in the course of that time, appear in about 100,000 copies, and reach probably 20,000 Dentists; most several times, and many repeatedly.

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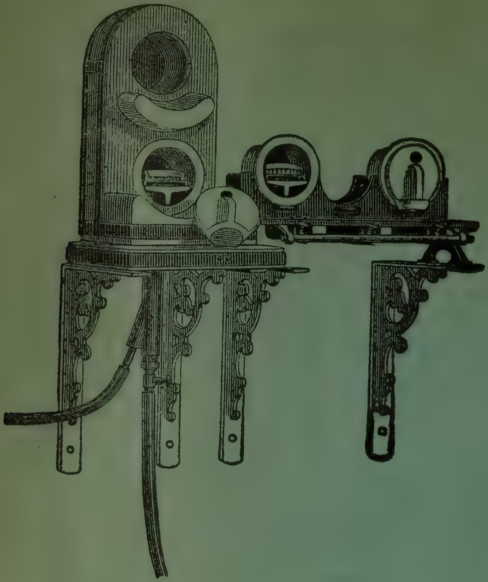

These Furnaces, which are the outcome of years of experiments, have been brought to the minimum of difficulty with the maximum of facility for working, for, although only six inches cube, sufficient heat can be produced in from five to ten minutes to fuse the gum-body or enamel for continuous gum facings (or work) for mounting on vulcanite, celluloid, or gold.

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Complete for use—Single Muffle Furnace	£3	15	0
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Instructions furnished with each Furnace.

A. B. VERRIER, Weymouth
Dorset, England.

British Journal of Dental Science,

LONDON, JUNE 2, 1884.

"CASES AND INCIDENTS IN PRACTICE."

There exists a wide field for industry and research, the which it is to be feared is at present left untilled, almost uncared for. In the busy whirl of time's untiring wheel, men are apt to grow deaf to the cries of their brethren who, thirsting for more knowledge, crave some of the precious drops from their cup of experience. Who does not know the priceless boon it is to sit at the feet of some wise Gamaliel, and while he unfolds his stores of knowledge—a knowledge no books can afford—a knowledge which, like some old mosaic, is pieced together from fragments, contemptible enough when standing in naked solitude, but which when each is fixed in its proper place helps to form a perfect whole, such as men can feast their eyes upon and grow better and wiser for its contemplation. The perfection of knowledge as it may exist among men can come but as the curtain of life is casting its long shadows towards the grave, and how many, alas! are there, who pass from our midst with all their wealth of hard-earned knowledge and leave nought behind them—they and their treasure are alike lost to mankind! To say such speechless living is selfish hardly represents the fact; there is no wilful selfishness in the matter, it too often arises from a very opposite condition of mind, one which makes a man doubt whether his experience be worth the having. The knowledge which commences when a man first starts upon the active pursuit of his profession, when he is emancipated from the warping influences of text books, is the knowledge which he should make it his business to communicate to his brother workers. This knowledge being composed [illegible] actual living facts—if we may be allowed the expression, is more valuable than all the arm-chair excogitations, the theorisings and multiplications of "dry-as-dust" researches among the writers of the dead, at least, to those practical men who want to *be* their profession and not to profess only. What has this to do with the "Science and Art of Dentistry?" It has this to do with dentistry and "Dentists," that these dentists are very parsimonious in their dealings the one with the other. There is an immense fund of knowledge made up of practical every-day facts, learned hour by hour in the consulting room and in the work room, which lies crystallised in men's brains but never become common property. How is this evil, for evil we take it all will admit such a state of mental miserliness must be, how is this to be met and remedied? To the Odontological Society of Great Britain must be awarded the thanks of the profession for affording at least one channel through which dentists can ventilate their knowledge, their views, and the result of their researches. That such Societies are felt to be wants at the present day, the very hopeful inauguration of the Midland Odontological Society shows. But the societies and the meetings of the branches of the British Dental Association valuable as they are in their way, fail to appeal to a large section of the community. Even were personal jealousies and party feeling ostracised from such confraternities, (which we fear will not be accomplished for many a long day,) yet there are many dentists who never come to the fore either because they would not, or could not write "papers" or who lack the assurance and experience required to undertake speaking in public. And again, it often happens that some little incident occurs in practice, extremely interesting but too trivial, it is thought, to send to the societies, and so it is lost.

In America these "incidents in practice" are collected with care, and the American journals teem with such interesting and valuable fragments. In the "British Journal of Dental Science" there has been a corner offered alike to all dentists, and there has been from time to time under the heading of "Reflections from the Surgery" a variety of "incidents in practice" which cannot but prove of great value. It is, however, a pity that more dentists in practice do not send cases, however brief or imperfectly strung together, in order that the difficulties of routine practice may be elucidated and abnormalities recorded.

If properly understood, the object of our "Reflections from the Surgery" exactly meets the want which has been descanted upon above, and would go a long way towards finding a cure for the evil which is so deplorable.

It cannot be said that dentists are too busy to notice the unusual cases which come under their observation, since every earnest practitioner cannot help having such cases engraven upon his mind, and half an hour in the leisure of the evening would amply suffice to jot down roughly notes of the incidents.

The profession of surgery has a vast advantage over dentists in this respect. There are always found men, never matter how busy they may be, who record, and record carefully, cases which, coming under their treatment present features of interest. And why should this not be so with dentists? It seems to us that it is the solemn duty of all who have the welfare of scientific dentistry at heart to buckle to, and give the dentists world at large all the benefit of their experience or variety of practice.

We learn with interest that an "Odontological Society of Victoria" has been started, and that Mr. George Thomson, L.D.S., whose appointment as dentist to the Melbourne Hospital we announce in another page, is honorary Secretary. We shall give furthet particulars in our next issue.

Meeting of the Odontological Society.—We are requested to state that the next Meeting of the Odontological Society will take place on Monday, June 9th, and not on June 2nd, which is Whit-Monday, a fact overlooked when the card was made out. This is the last Meeting of the session.

Death of Professor Gross.—Few American surgeons are better known among all sections of English surgeons than Professor Gross, of Philadelphia. He was an accomplished exponent of the surgical treatment of neuralgia of the jaws, and his writings in connection are well and widely known among English dentists. All will regret his death, which occurred on the 6th, and all will remember alike his skill as a surgeon, andhis charming facility as a penman.

Dentists' Education in Ireland.—Ireland has at length followed suit and acting upon the adage that it is "better late than never," has initiated a Dental School in connection with the Dental Hospital, York Street, Dublin. This school has now been formally recognised by the Council of the College of Surgeons of Ireland, and has undertaken a career in which we heartily bid them God's speed. Among the members of the staff we notice the names of Dr. Theodore Stack (Dean and Lecturer on Mechanical Dentistry), Mr. Arthur Baker (Professor of Dental Surgery), Mr. Daniel Corbett Jun., (Lecturer on Dental Anatomy), Dr. Charles Cameron (Lecturer on Dental Metallurgy)., The buildings in which the school does its work are well appointed and commodious,

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American Dentists and Authors.—An American Editor of a Dental Journal laments the imperfect way in which some societies are supported, and says he is sure that by far the larger portion of American Dentists are equally deft with their pen as their forceps. We agree, but is the same assurance true on this side of the Atlantic. As all who have travelled in America know, everyone there drives a quill and drives it well. This probably arises from the fact that the American practice writing far more than Englishmen do, English dentists would do much to raise their profession in the esteem of all both here and abroad, if they would shake off their cloak of tacitunity.

MORE FATALITIES DURING THE ADMINISTRATION OF CHLOROFORM.—The Journal of the British Medical Association informs us there have been two more patients die under chloroform. The first occurence took place at the Glasgow Royal Infirmary on the 9th instant, the patient being a young lad who was undergoing an operation for disease of the wrist. Chloroform was administered. It was observed that under the anæsthetic the heart's action was not very satisfactory, and before the proposal to substitute ether for the chloroform could be carried out, the pulse ceased, All the usual restorative means were tried, but without success. It is only very recently that special rules for the administration of anæsthetics in this hospital were drawn up, in the hope of eliminating all fatal cases, but an accident such as the present shows that, with every available care and precaution, such as was taken here, deaths under chloroform will from time to time happen.

In the second case the same Journal writes that a death occured at St. Bartholomew's Hospital last Wednesday during the administration of chloroform. The patient was a woman seven and a half months advanced in pregnancy, who had been admitted on account of placenta prævia She had taken chloroform on the previous day without any untoward symptoms; but on the second occasion, died soon after the commencement of the administration. The child was rapidly extracted by Dr. Clement Godson, and was living twenty-four hours later. Death from chloroform administered during labour is generally recognised to be an extremely rare event. The fact that the patient in this case was suffering from placenta previa suggests the probability of death having been due to a syncopal attack.

REPAIR OF CELLULOID DENTURES.—Dentures made of this material when once broken are not easily mended. The independent practitioner says: If a new piece be put in under heat and pressure, it will hold for a time, and then it separates. The only way to get approximate security in attaching a new piece, is to accurately fit it into a groove or dove-tail, soften he edges of both the plate and the new piece with a saturated camphor solution, and than apply pressure while the piece is cold, until a union between the parts is secured. After this the heat may be applied, and the piece pressed home.

But a better and surer way to repair a celluloid plate is to run plaster of Paris into the palatal portion, and set it on the bottom of a flask, then cover the lingual and buccal surfaces with the thin sheet wax such as is used in the manufacture of artificial flowers, after which it is to be invested in the flask, placed in the celluloid apparatus and heated until the old plate can be easily removed from the teeth. A new blank is then to be placed in the mould, and pressed home in the usual manner. The sheet wax referred to gives about an added thickness necessary for finishing. Of course more can be added in any place if needed.

THE GENESIS OF DENTAL CARIES.—Dr. Miller writes:—"In the light of these experiments the thorough decalcification of the tooth substance in caries is easily accounted for. The saliva is, no doubt, always, particularly in the mouths of unclean persons, impregnated with sugar, either taken directly into the mouth, or formed there by the action of the ptyaline of the saliva upon starch. * * * Wherever this stagnates between the teeth, in fissures, etc., especially during sleep, it *must* become acid. When a portion of the dentine has become decalcified, it, as is well known, takes up the liquids of the mouth like a sponge, and the fungi with them, and the fungi, being independent of the free access of air, go on producing acid within the dental tubules. As each layer of dentine becomes softened in turn, the micro-organisms follow after, continually producing acid. Hereby the existence of the zone of softened non-infected dentine is readily understood."

Dr. Miller also points out the fallacy which exists when we test the saliva itself as to reaction. "The production of acid is entirely independent of the reaction of the saliva as it enters the mouth, hence the uselessness of "testing the saliva "for acid. That the liquid squeezed out of the tubules of *decaying* dentine has an acid reaction, every dentist who has a piece of blue litmus paper, and is not color blind, can easily prove for himself."

THE THERAPEUTIC VALUE OF THE PAW-PAW.—This drug has been recommended and employed with considerable benefit in indolent ulcerations. It is largely used in America for ulcers about the buccal cavity.

We believe its merits have at present met with little sympathy on this side of the Atlantic.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the Publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against one another. All makers, vendors, and inventors, ore invited, with strict impartialisy, to contribute towards this end.

OILING APPARATUS FOR BURRING ENGINE.

Mr. Rutterford has a most effective oiling instrument, brought out by Messrs. S. S. White & Co. It is an adaptation of the stylo-graphic pen, and so accurately made, in the form of a nickelplated syringe, that it is perfectly oil tight when out of use. For use it is only necessary to press its fine nozzle into any joint or bearing of the engine—or anything else—when it delivers from the hundredth part of a drop of oil and upwards, exactly where required, so lubricating thoroughly without soiling surrounding parts.

CHAIR-BRACKET GAS ANNEALING LAMP.

Mr. Josiah Ritchie has a new nickelplated atmospheric gas annealing lamp with guard, designed for use on wall-bracket, chair-bracket, table, &c. It is an ornamental little self-contained lamp, to be attached to any adjacent gas supply by a thin flexible tube.

IMPROVED No. 2 BRONZE VULCANIZER.

Mr. Ritchie has also improved his No. 2 Phosphor bronze vulcanizer, by slightly deepening it, that it now receives two full sized pin fastened flasks. The metal of the boiler is also somewhat thickened which tends to steadiness of temperature.

Advertising is not quite dead in France. A dentist writes to L'Odontologie, that he witnessed a sad equestrian accident, which cost the victim three teeth, and it is to be presumed the dentist's fee. The Editor wishes to know whether that dentist was anxious to let the world know when he was at home, and where?

Abstracts of Foreign Journals.

ZAHNTECHNISCHE REFORM.—*March.*

"On Setting of Defective Jaws." by W. Kay, of Berlin.

In forming a model, one should aim at obtaining as natural an appearance as possible, so the first attempt is often merely a trial piece. It should work as easily as possible, so as not to loosen the supporting teeth by too great pressure. The defect should be filled with a solid piece, which on the tongue side should look like the natural roof of the mouth. A strong gutta-percha plate must be pressed on the upper model especially in the hollow of the defect, the brackets must be removed from the articulation plate and pressed in their place in the gutta-percha. Then wool or wadding is folded together, laid in the hollow, and covered with a wax plate, so that the form of the roof of the mouth is obtained. Then the teeth are placed for mastication and the piece tried in the mouth. The setting is now pencilled with oil and carmine, laid on the model, and the gypsum taken away till the piece is perfectly on the model, then a check protector is formed which has for its aim the drawing out of the muscles of the cheek and to fill out the form of the cheek. Then the model is covered with gypsum in the under part of the cuvette, the upper part is then set, and gypsum poured over. After the gypsum has become sufficiently hard, the cuvette is well warmed so that the guttapercha becomes soft. The wax is then scalded, the guttapercha removed, the upper surface of the model is then covered with talc, and a plate of red caoutchouc pressed carefully into the hollow. The brackets of the teeth in the upper part of the cuvette are surrounded by little pieces of caoutchouc and the hollows filled for the cheek protectors. Then both parts of the cuvette are warmed and carefully pressed together and placed in the kettle. It is not necessary to vulcanize in a very low temperature, the piece is then worked up, polished, and placed in the mouth. As has been before said, this is often merely a trial piece whereby the muscles can be stretched and one can see if it can be worn with comfort. If there is any pressure existing, the place must be filed, if very little filing is necessary it may be polished and used permanently. If there is much filing to be done, a fine sheet of wax is melted with the solder pipe so that a flat surface is obtained, the gypsum is then poured on the palate side.

This model is cut and forms two grooves, one longways and one cross. Then the whole piece is oiled, and tolerably strong gypsum poured in round the model and over the teeth so that these are covered with caoutchouc on the inner side. The palate plate is then sawed round near to the teeth and the latter and the brackets taken out of the remaining caoutchouc rim, the teeth and brackets then being put in their proper places. Then both sides are set, bound together, a spoonful of wax melted and poured in while it is hot between the teeth so making them firm.

Then the piece is plastered on the model and treated as was before mentioned. It is better to vulcanize on the model then merely to plaster the wax piece, or that might very easily be spoilt in removing it.

The interior of the *mass* can be fitted with little pieces of zinc which can better be removed by hydrochloric acid; there may be danger of these pieces of zinc coming through the caoutchouc partition, an equal strength of the latter cannot be obtained and the caoutchouc will generally come between the pieces of zinc which makes the mass immensely hard. The use of sand instead of zinc is to be recommended. As suitable expansion is formed by means of cotton wool, after the shape of the hollow, and sewn into a little linen bag, leaving a small opening for drawing out the wool; after it has been filled with fine dry sand the opening is sewn up. One then proceeds as with the wadding. After the piece is vulcanized a hole is bored in the mass an tapped with an instrument till all the sand runs out.

A little groove is cut in the hole, a suitable cylinder is filed out of vulcanized caoutchouc, warmed, and put in the hole. It turns in the groove and remains firm, then the upper part is cut away and the place is cleaned. If the upper jaw is devoid of teeth the support must be provided for by *pivots.*

If all the teeth are present underneath on the inner side of the under teeth, a bridge must be laid which must be in connection with another on the outer side and in which the pivots must be soldered. If back teeth exist extraction must be resorted to. When the remaining upper jaw is toothless the impression taking is easier; models for mastication are next prepared; the models for the upper part are made of gutta-percha strengthened by wire, the alveolar formed of wax. These models, with pivots for the purpose of mastication, cannot be brought into the mouth as the least opening of the mouth is difficult. For the upper piece, they are held with an instrument or the fingers in their place so that they remain firm. This is necessary to estimate the distance to be allowed for the teeth to bite into the wax. This must be rather short as the mouth can only open a little at first, but there must be sufficient space for the insertion of a teaspoon between the teeth.

As much wax as is necessary is removed till the right amount is obtained. The plate is then introduced into the articulator, bent, and fitted without pivots, while the upper piece is held in its place by the fingers. If the biting is satisfactory it is put again in the articulator with the pivots on the side which is not resected, this is easy, on the resected difficult. Then the cheek protectoris modelled in wax—the pivots must neither rub on that nor the teeth; the pivot holders must be vulcanized. They must be taken from the holders and the piece plastered, and the head of the holder pencilled with thin fluid gypsum Later on caoutchouc can be pressed between. The plastering and stopping the form of the mass &c., takes place in the usual way, only the making of the cuvette is simpler.

ILLINOIS SOCIETY'S PROCEEDINGS.

BEST METHOD OF CORRECTING IRREGULARITIES; by Dr. Wm. Morrison.

Premature extraction of deciduous teeth is probably the cause of most of the dental irregularities. The masticatory movements, so essential to the development of the jaws, are absent when the deciduous teeth are prematurely removed.

When the permanent incisors appear within the deciduous ones, these latter are removed, and if the alveolus is not developed, and there is tendency to rotation of the crowns, the lateral incisors are removed also, and further growth of the jaw is arrested. On the appearance of the permanent laterals, the deciduous canines are removed. The laterals thus rest upon the bicuspids.

The permanent canine, upon its eruption, rides down upon both, and finding no space, grows outside the circle forming a tusk. To avoid this, bicuspids and molars are removed, and this causes a change in the line of occlusion, tipping some crowns forwards and some back, and allows some crowns to be too long; and some to be too short, all this is due to removal of the key-stone of the dental arch.

The treatment recommended is that, no extractions be allowed, that waiting is is urged, that the baby teeth be loosened with finger and thumb. If there be not room for advancing teeth, wedging may be employed. It is urged that the absorption of the ossified roots of the milk teeth has a very important physiological action upon the development of their successors.

"I rarely extract deciduous teeth or roots," says Dr. Morrison, but leave them as so many wedges or keys between the permanent teeth. If pulps are dead, since absorption cannot occur, the crown may be snapped off with excision forceps. The object of this manœuvre is that the roots may be pushed asunder by the advancing crown, and in time absorbed.

For the ordinary irregularity of the arch, wooden wedges are recommended. When much force is needed, a jack-screw with thin bands of platinum may be used; it is cemented with phosphate to the crown of the tooth to be removed, and to one or more on the opposite side. The jack-screws are made of a platinum tube (plate guage 27), drawn to receive a steel screw (guage 15). The pressure may be daily increased. The screw may, if needs be, be supplemented by wedges or between the spaces of the adjoining teeth. Some typical cases are then cited to demonstrate the practical working of this method.

INDEPENDENT PRACTITIONER.

"Dental Mechanism," by A. Retter, D.D.S.

The paper commences by stating rubber is the most abused of agents employed in mechanical dentistry.

This is due to the bungling which occurs when unskilled persons attempt its manipulation. Dr. Retter likes rubber because he believes if properly treated, it is efficient and cheap.

It is the most plastic material we have; it is even more elastic than gold; properly prepared it is almost indestructible. Its disadvantages lie in its cheapness—inducing fraudulent persons to make badly fitting dentures and its non-conductibility. He says: "To obtain a nice impression in a delicate and neat manner, is by no means an easy task, to say nothing of the study of the model, the arrangement and selection of the teeth, for we must restore the features of the face, and the expression marred by the loss of the teeth. To do all this properly is not within the reach of a novice or a boy, but it requires years of experience, beside considerable natural ability and talent."

It is the skilled work, not the material, for which patients should be asked to pay.

The writer believes the soreness of mouth attributed to the use of rubber is often due to ill fitting, to want of cleanliness, badness of rubber, imperfect vulcanisation. He has met with like results from gold, platina, and continuous gum work. Strict cleanliness is said to be protective against sore mouth, the rubber being taken out at night.

The quality of the rubber used must be good—Akron rubber is said to be the best. The plaster model must never be subjected to boiling water, whether for cleansing or bringing the flasks together. Dr. Retter packs in the "new mode heater," using dry heat. Plenty of rubber should be used with strong pressure, rubber or celluloid will not get into the gum blocks if packed with care. Flasks when in the vulcaniser should not be immersed in water. An old half flask is to be placed in the bottom of the vulcaniser, water is added to reach the upper edge, then the flasks are put in; the heat is then slowly raised to 320 deg. for 1hr. 10min.

For celluloid, our author prefers the new mode. In some cases he uses celluloid in preference to rubber.

Two impressions should be taken; the teeth arranged and waxed, the second model then waxed as he would like to have the blank in size and shape, it is then invested in a flask, and the wax removed, and a suitable blank pressed to shape. After cooling, it is trimmed and used for the plate. Neatness in waxing is essential.

DENTAL HYGENE—THE BEST VARIETIES OF FOOD to DEVELOP AND SUSTAIN TOOTH STRUCTURE. By S. B. Palmer, D.D.S.

IT is highly important the dentists should instruct the patients as to how to attend to their teeth.

Mothers may do much to make or mar their children's teeth during gestation and lactation.

Dentists are seldom called upon to treat children under four years of age. No temporary teeth should, if possible, be allowed to decay.

Really, it is the dietary which must play the most important rôle in maintaining the teeth intact.

Analysis of the body demonstrates the presence of thirteen elements.

Milk contains all that is essential for growth during infancy.

In the modern modes of flour making, the phosphates are thrown away, and so the bread is robbed of its chief nutritive value. Oatmeal is devoid of this draw-back.

After impressing the duty of giving "bone formers" to the child, comes that of enforcing cleanliness, with removal of fragments of food from between the teeth, the frequent rinsing out of the mouth with lime-water, bi-carbonate of soda solution, &c.

Literary Notices and Selections.

TRISMUS NASCENTIUM; OR, THE LOCKJAW OF INFANTS.

ITS HISTORY, CAUSE, PREVENTION, AND CURE.

Illustrated by Cases and Post-mortem Examinations, with Statistical Table of Two Hundred and Twenty-nine Deaths.

By J. F. HARTIGAN, M.D., of Washington, D.C.

(*Continued from page* 478.)

In the *Med. Record* for Dec 2, 1882, Dr. J. G. Thomas, of Savannah, writes that adhesion of the prepuce produces a certain per centage of cases in male children, and cold draughts of air prove an active factor in causing the disease in both sexes.

In this connection, Copeland remarks:—

"If we consider the diverse, or even opposite nature of the measures which have been prescribed for this malady, their apparent success in some instances and their failure in others, and their employment in different states of the disease, with little regard to the navels, or their operations in relation to pathological conditions, we necessarily must infer that recovery has sometimes taken place notwithstanding their use, and not by their aid."

Due warning of the effects of pressure, or approach of the disease, is given by the child being disposed to whine and cry; it may be subject to heavy, deep slumber, or starting in sleep; is languid, moans, cannot take the breast, although seemingly anxious to do so. A peculiar restlessness or twisting of the upper extremities while awake without evident cause, sudden changes or colour, screwing of the mouth, accompanied at intervals with a characteristic shriek, are reckoned sure forerunners. Generally, with one or more of three symptoms preceding, the infant is seized as if by an electric shock. These follow every few minutes, when "every muscle is thrown into distorted action, showing the wrinkled forehead, livid countenance, elevated brow, closed eye, dilated nostril, rigid masseter, fixed jaw, closed mouth, bubbling saliva, retracted head, turgid veins, arched spine, raised chest, troubled breathing, catching diaphragm, heaving abdomen, separated arm, squared elbow, bent wrist, clenched fingers, incurved thumb, extended legs, bent down toes, the whole figure rigid as wood—a pitiful sight."

The paroxysm is renewed by a slight noise, the gentlest touch or zephyr. A placid interval of a few minutes succeeds, and then another fit follows. There is no uniformity about the action of the bowels or kidneys. Emancipation rapidly advances. The skin assumes a brownish hue, and hangs in shrivelled folds of leathery texture. Peace and pang pursue their sickening interchange, and the child sinks by degrees exhausted.

From such a history it is no wonder so many conflicting theories have been advanced as to the cause of this disease; in fact, anything that the writer happened to fancy or guess, has been offered.

In his first article, Dr. Sims very truthfully said that—

"The causes have been points of debate and conjecture, and of its true pathology we have never had any settled opinion. Its treatment has consequently been one of varied empiricism. Wherever are poverty, filth and laziness, there will it be oftener found. Wealth, a refined mind, and affectionate heart, are comparatively exempt from the ravages of this unmercifully fatal malady. But, expose this class to the same *physical* causes, and they become equal sufferers with the first."

In illustrating the great rigidity of the frame, in one of the cases that he reports, he caught hold of the feet and raised the whole body without flexing the thighs on the pelvis. He then ran his hand under the head for the purpose of elevating the body in the same way, when he immediately detected a *remarkable irregularity* in the feeling of the bones. *It had lain during the whole of its illness exactly in one position all the time, the weight of the head resting wholly on the os occipitis.* The pulse was uncountable, and the breathing, from 120 in a minute, was reduced to 70, with a corresponding amelioration of the other symptoms This occurred within ten or twelve minutes after he had taken up the child for examination, and in this way he discovered the relation of *position* to the disease. The child dying the next day, a post-mortem examination showed the superficial vessels of the brain full of black blood, and coagulum occupying the whole length of the spine.

In his second article, published in 1848, Dr. Sims says that new facts and observations had satisfied him that deficient ossification of the cranial bones was not essential to the production of the disease; and it was not intended to be understood as a *pathological* condition, but simply the *physiological* state so necessary to a safe and easy parturition. He modifies his statement as to *dorsal decubitus,* having found that children may have trismus, and at the same time be kept on a feather bed, when they are laid upon what is usually called *the side.* He also admits that a child may die of the disease in its most aggravated form, and yet have no extravasation within the spine. He says the position is fully sustained—

"That trismus nascentium is a disease of centric origin, depending upon a mechanical pressure exerted on the medulla oblongata, and its nerves; that this pressure is the result, most generally, of an inward displacement of the occipital bone often very perceptible, but sometimes so slight as to be detected with difficulty; that this displaced condition of the occiput is one of the fixed physiological laws of the parturient state; that when it persists for any length of time after birth, it becomes a pathological condition, capable of producing all the symptoms characterising trismus nascentium, which are relieved simply by rectifying this abnormal displacement, and thereby removing the pressure from the base of the brain."

Of his first case of *trismoid,* or chronic form of the disease, that he saw, he says:—

"If the occiput was so much displaced, and the child lived *five* months, how is it that they die very suddenly, and that often, when the occiput is so slightly displaced as to be scarcely discoverable? Let us examine the facts for an explanation. The child was kept all the time in a cradle, without a nurse. The cradle was too short to allow it to lie flat down, so it was kept in a semi-erect position, with its head supported by a large old pillow of chicken feathers, all matted together, the cradle was too deep and narrow to allow it to turn on its side, even if it had been strong enough to do so; the unvarying 'dorsal decubitus' kept the occiput displaced; the semi-erect position threw the weight of the head on that point of the occiput between the occipital protuberance and the posterior fontanelle; this necessarily tilted the mesocephalon forwards against the cuneiform process of the occipital bone, and pressure exerted on the pons always produces chorea or paralysis, or both, in exact proportion to the amount and degree of pressure. The semi-erect position was altogether favourable to the prolongation of disease (and of life), because in a perfectly supine position, the weight of the head would have rested lower down on the occiput, which would have displaced the bone, so as to press more on the medulla oblongata and the eighth pair of nerves, and thus the patient would, in all probability, have died at a very early period of asphyxia."

To be Continued.

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

By J. W. William White, M.D.,

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENSYLVANIA, AND SURGEON TO THE PHILADELPHIA HOSPITAL.

(*Continued from p.* 474.)

A point of true practical interest is that the Hutchinson tooth is changed in form after adolescence, and ends by losing its characteristic notch. Under the influence of functional employment the arch of the free border—the depth of the notch—progressively diminishes or shortens. A time arrives when the curve of this vault is scarcely perceptible. Finally, all trace of the notch disappears, and the free edge is transformed into almost a straight line. Let us be precise. From the age of twenty to twenty-two years the vault is notably diminished. At twenty-five years it becomes nearly flat. But at this time there still remains, at least for a while, a particular sign which enables us to recognize the lesion. It is the bevel of the anterior edge of the tooth. Remember that the Hutchinson notch is cut from above downwards and from before backwards, at the expense of its anterior border. This bevel is naturally not affected by the general wearing of the tooth until the last; so that it remains still easily recognizable when the notch has disappeared. It thus constitutes a final vestige of that lesion. I saw to-day a fine specimen of this kind. The patient was born of syphilitic parents, and has been affected with the different symptoms of hereditary syphilis. She had certainly (her testimony on this point is very clear) her two superior central incisors strongly notched. But that disappeared with age, she affirmed; and now, having reached the age of twenty-five years, she pesents but a faint vestige of this old lesion, in the form of a sharp bevel of the anterior edges.

Such is Hutchinson's tooth at the age of twenty-five years. Beyond this age the bevel in its turn disappears, and nothing remains of the primitive malformation, unless it is a shortened tooth, which has no further significance. So that it has been truly remarked that beyond tne age of thirty years there is no such thing as Hutchinson's tooth. This dental malformation is marked not only on account of its shape, but also, and to an equivalent extent, by its location. Thus, first, in a manner which we may almost call constant, it has for its location the superior central incisors of the second dentition; second, it not less commonly affects the two teeth in precisely the same manner, symmetrically; third, it often happens that it affects them in an exclusive manner—that is to say, as a rule, the notched erosion is met with on the two central incisors, and the other teeth do not participate in this order of malformation, though perhaps exhibiting malformations of another kind. It is curious, for example, to meet alongside of notched central incisors the lateral incisors free from all notching.

Having determined the rule, we must make note of the exceptions. Each of the three propositions which I have just formulated has its exceptional cases, which we are compelled to mention. The Hutchinson notch is observed not only on the superior central incisors of the second dentition; it is met with on the same teeth of the deciduous set; it is seen sometimes in the second dentition on teeth other than the central incisors, viz., the upper lateral incisors, the inferior incisors, even (but rarely) the cuspids. It can affect in different degrees the two superior central incisors, or it may affect only one, the other remaining intact. Cases of this kind are very rare, to be sure, but Legros, Clarke, Hutchinson, and Moon have each cited well-authenticated examples. I have in my notes a similar case, where one of the central incisors was entirely normal while the other presented a perfect type of the crescentic notch.

Several classes of teeth can, at the same time with the central incisors, present the type of the crescentic notch. I have now a patient, son of a syphilitic mother, and affected with specific symptoms of congenital origin, who presents different malformations of the dental organs: among others well-marked notches, first, on the superior central incisors; second, on the two inferior central incisors; and third, on the cuspid. Likewise, in the mouth of a young patient of twelve years, lately shown me by my colleague and friend, Dr. Besnier, there are recognizable very fine Hutchinson notches upon the two superior central incisors, as usual, and also upon the four inferior incisors.

Such are the various forms of what is termed dental erosion. After having described them individually, it remains for me to add that they rarely present themselves in an isolated manner. Thus, nothing is more common than to recognize in the same subject dental erosions of different types on different teeth—here grooves, there depressions or facets, elsewhere angular notches or cuspidian atrophy. Two or three varieties of erosion tend to multiple combinations. The Hutchinson notch, which in this respect is an exception to the common rule, very often constitutes an exclusive lesion. There is nothing astonishing in the habitual coëxistence of these different forms of dental erosion. They are in effect but varieties of one and the same lesion, and though they assume different objective appearances, they arise from one and the same morbid process. Thus, as has been forcibly said and demonstrated by Dr. Magitot, dental erosion is a uniform pathological condition, and the differences which it presents are but variations.

Dental erosions are now known to us as far so the lesions are concerned ; but many essential peculiarities of their clinical and anatomical history remain to be noticed. A word or two on their habitual seat. They can affect both dentitions, but they are observed more frequently on the permanent than upon the temporary teeth. In the second dentition (which we have to consult particularly for special diagnostic signs), dental erosions are met with in the order of their frequency: First, on the first molars ; second, on the incisors ; third, on the cuspids. The first molars, especially those of the lower jaw, are most frequently affected by the erosion.

To start with, therefore, we can establish the principle that, if any class of teeth is touched by the erosion, it is an exceptional case where the first molars remain intact ; and it is not rare that they alone are attacked, to the exclusion of other teeth. Inversely, there are dental groups which are almost invariably exempted by the erosion. There are the bicuspids and the second and third molars.

Note the following propositions : First, dental erosions are almost always multiple. At the least they affect two teeth ; much more frequently four, six, eight, ten ; sometimes twelve or sixteen. It is an extraordinary case to find but one tooth eroded. I have, however, a case of this kind in my practice. A young man, son of syphilitic parents, and syphilitic himself from birth, presents a first inferior molar affected with the most marked cuspidian atrophy, while the remainder of his teeth are entirely exempt from the slightest alteration.

Second, dental erosions are nearly always symmetrical—that is to say, they affect homologous teeth in a like manner. So that, for example, if the right lower cuspid has an erosion on its crown, there is every chance in favour of finding the same lesion on the left lower cuspid. To this law of symmetry there are but very few exceptions.

Third, erosions of corresponding teeth maintain the same level on the crown. That is to say, if an erosion is situated at a given height on the crown of a tooth on the left side, the corresponding tooth on the right side will present an erosion situated precisely at the same height on its crown. For example, let us imagine a lower central incisor of the left side presenting a transverse furrow at the union of the upper third with the lower two-thirds of its crown ; you will almost invariably find on the corresponding tooth of the right side an identical furrow situated at the same height. In the same way, suppose it be an angular notch occupying the crown of a lower cuspid ; almost certainly the crown of the other cuspid will be the seat of a similar lesion, and so of any other variety of erosion.

Fourth, erosions are situated at different heights on teeth of diffrrent classes ; and these differences of level are in precise anatomical relation with the chronological differences of eruption of these different teeth. If we compare two eroded teeth of different kinds in reference to the level of the crown at which the erosion has taken place on each of them, we find that it is seated at different heights. Take, for example, a cuspid and a central incisor of the lower jaw. On the cuspid, the erosion will occupy the edge of the tooth ; on the incisor, it will be situated from one to two millimeters from the edge The differences which intervene in the reciprocal development of different classes of teeth correspond exactly with the differences of level in the erosion of these same teeth. The cuspid is later than the incisor in the beginning of the development; it commences to calcify later, and, at the time when its crown is only in the early stages of formation, the incisor already measures one or two millimeters of finished dentition. There is, therefore, a precise connection between the height of the erosion on the crown and the stage of dental development at a given time. These technical details are indispensable in order to properly interpret the pathogeny and the semiological value of the dental erosion.

To be continued.

Cicero, writing on "The Laws" says:—"And since in the law there was this clause, that gold should not be buried with the dead, how humane is the exception made by another law, *that if the teeth of the deceased were fastened with gold*, the corpse might be buried or burned without taking it away, and no wrong be done." It should be noted that the "Twelve tables" from which the quotation seems to be taken, were enacted about B.C. 450.

In the April number of *The American Journal of Medical Sciences*, Dr. Louis A. La Garde reports a successful case of this rare operation (the opening of the œsophagus), for the dislogement of a plate of artificial teeth, and he shows that existing statistics do not support the view of Sir William Fergusson and Nélaton, that œsophagotomy is a dangerous operation.

Dental News.

MIDLAND ODONTOLOGICAL SOCIETY.

Concluded from page 482.

Mr. J. W. Roberts said he had not hitherto looked upon the medical men as those almighty things which Dr. Miller seemed to have represented them. There were objections to seeking the patronage of medical men when they did not seek that of dentists in return. In calling in a medical man for every trifling thing, they were calling in a man whose education was little better, even if any, than their own. He held with the wholesale removal of teeth as much preferable to removing one tooth one day and another tooth the next day. He looked upon the latter plan as much like chopping off a dog's tail by degrees, on the ground it was cruel to cut off the whole tail with one blow. He contended that, notwithstanding the glowing advertisements in the daily papers, loose teeth could not possibly be stopped. The question of rivetting is a mistake altogether, unless done in an artistic manner; to be done well it required a good deal of time and attention, and considering what the patient has to endure, it was doubtful whether he was compensated with the result. Artificial teeth, he contended, ought to be removed frequently, as saliva had not power for cleaning them as with the natural set. He thought, therefore, that artificial teeth should be made so as to be easily taken out. As an instance of this necessity he pointed out the danger incurred by a woman in labour smashing her teeth, and under the circumstances such a person should be without them until returned to a state of convalesence. As to material employed they ought to do their best for a patient consistent with the fees charged. He had known many instances of persons being unable to pay the fees, and when this was the case, he thought the practitioner should be content with a little less profit, and put something into the mouths of the people that would prove satisfactory. He had known instances of the use of common materials, and though the dentist may have acted honestly he got blamed for his work. He held it was always wise to use material consistent with the work and good enough to make the work satisfactory. In the matter of colour there were many idiosyncracies in taste, and it was a difficult thing to persuade persons to have artificial teeth according to the taste of a dentist. As to the difference shown by people in feeling pain, he did not look upon it as pluck altogether, but that some persons have greater brain senthat had been read was not only worthy of the Midland Odontological Society, but would have been worthy even of the Odontological Society of Great Britain. (Applause.)

Mr. W. J. Watson took exception to the word "price," as used by some of the speakers. They had started their Society on a scientific basis and ought to keep to similar terms and speak of fees and not price. As regards the medical men he considered they did not do justice to dentists. A medical man ought to act more kindly, considering his own standing and position. The great difficulty dentists had to contend with, was in the matter of fees Some people when they wanted a set of teeth would say that such-and-such a person had had a set from a certain dentist and that they ought to be a set for the same amount. They seemed to have no idea of the difficulties to be overcome in different cases, and that a line of action followed in one case would not do for all others. It was the duty of every dentist to educate his patients on the matter, and to teach them that remedies applicable in one case did not suit all others. If a person went to a medical man, he did not ask what drugs he was to have, but simply placed himself in the hands of the medical man for a certain fee. He hoped the time would not be long before every family would not only have its doctor, but its dentist, upon whom they could place implicit confidence and rely at all times in securing efficient services at a moderate fee. The president said, that during his long connection with dentistry, he had found that the medical men were generally easily managed, for as a rule they knew nothing about teeth. Of course it was the worst possible thing for a medical man to fall in the estimation of his patient. If a mistake was being made, the dentist should quietly make a suggestion, when a sensible medical man would see what he was driving at, and consequently come to the same conclusion. When that happy state was arrived at, there would be harmony between the two, and they would have the confidence of the patient, who would also be benefited by the mutual understanding. He have had many difficulties with ladies in the selection of teeth. Some argued that as their friends knew they had false teeth, what did it matter about the colour. He exercised his own judgment in the matter, and if a lady selected the whitest of teeth, he would perhaps change to four or five shades lower. The style it was to the interest of the majority of people that a change should be made. He agreed with the suggestion for the extraction of the lowest teeth, where they would not stand the pressure, though there were instances in which healthy stumps would bear as much pressure as the teeth ground sitiveness than others. In conclusion, he considered the paper down. He gave an example of a case of this sort, which he had operated on successfully some years ago. In regard to pivotting, he had known such cases last for years. He considered those were less likely of taking bad ways hereafter than were the crown had been removed by decay. As to the use of plates and the danger to women in labour, that must be left to the women themselves; people got so used to temporary cases, that when a dentist wanted to put in the permanent ones they objected, saying that they would do just as well as the latter. Thus the dentist was placed in a difficult position, as the patient was always on the *qui vive* about the price.

Mr. W. J. Watson proposed a vote of thanks to Mr. Adams-Parker for the very excellent paper which had been read, and which had certainly taken up a good deal of time and care in the preparation. He was aware that Mr. Parker had devoted a good deal of time to the subject, and the result had been given them in a very able manner.

Mr. Dally seconded the motion which was carried unanimously.

Mr. J. W. Roberts read a paper, the title being, "What are We?"

Mr. Owen discussing Mr. Roberts' paper, said it appeared to him the idea of Mr. Roberts was, that every dentist should be qualified to act in surgical cases but in that Mr. Roberts had, in his opinion, anticipated the profession by 25 years. They must know that whatever they may think of themselves as a body, the bulk of their practitioners were more mechanicians than surgeons. There were some exceptions of course, their worthy president for example, and others who were qualified to take a position they would like to see in. It was necessary, however, for them to educate themselves as a profession before they could assume that position which Mr. Roberts would like to see. There were conditions, no doubt, that required medical treatment, and he contended that dentists ought to be able to treat a patient, whatever the condition may be. Mr. Owen next referred to the use of anæsthetics, in which he claimed to have considerable experience, as well as claimed to have been the first dental practitioner out of London who administered nitrous oxide gas. He contended that, doctors as a rule knew but little about anæthetics; were scarcely qualified to judge when a patient should take anæthetics. They had not, in his opinion, sufficiently considered the subject, and in some cases he had had to oppose their ideas.

The President said that in his own practice he gave gas.

He never gave ether or chloroform, except in the presence of a second medical man. He apprehended that in case of death, when about to perform an operation, and the giving of ether at the same time, a person would not be held guiltless of death in the absence of a second medical man. It required one medical man to look after the patient regardless of the operation. Chloroform was usually given in cases of midwifery, but only to reduce pain and not bring on unconsciousness. But a dental operation could not be performed without absolute insensibility, and here came the risk.

Mr. F. J. Sims said he had usually used a cork as a gag. He had seen cases where teeth had been broken off by the immense strength of the patient, and in one particular case so great was the pressure that the cork was completely closed as easily as a piece of dough. As a rule he called in a medical man when he administered gas. The old surgeon told him that he would never administer gas, except in the presence of two or three others, as the responsibility was so great, and therefore it was well to get several friends to share it.

Mr. Owen said that as a rule he did not call in a medical man, and he could not count on his fingers the number of cases he had had under chloroform or ether. He did not like the cork prop, because it was uncertain. He used a kind of metal prop, invented during the last twelve months.

The President considered there was nothing better than the cork prop.

The proceedings then closed with a vote of thanks to Mr. Roberts for his paper, on the motion of the Chairman.

An Ancient Dentist.—In 1757 an advertisement appeared in the New-York papers with "John Baker, Surgeon Dentist." He "begs leave to acquaint the gentry of New-York City that he has given proof of his superior art to the principal nobility, gentry and others of Great Britain, France, Ireland and other places of Europe; also, to 2,000 persons in Boston, and is now in this city, at Mr. John Watson's, in the house where Captain Randall lately lived, on the corner of Pearl St., where he fills teeth with lead or gold, so that they will remain fast for many years, and may eat, drink and sleep with them in their mouths, as natural ones, from which they cannot be discovered by the sharpest eye.

There are twenty Dental Colleges, in the United States including dental departments in universities.

MEETING OF THE REPRESENTATIVE BOARD OF THE BRITISH DENTAL ASSOCIATION.

THE Representative Board met on Saturday, the 3rd inst. Mr. J. S. Turner, Vice-President, occupied the chair, and there were present Messrs. J. F. Cole (Ipswich), R. White (Norwich), Waite (Liverpool), Macleod (Edinburgh), Cunningham (Cambridge), T. Cooke Parson (Clifton), R. Rogers (Cheltenham), W. A. Hunt (Yeovil), Dennant (Brighton), and S. Lee Rymer (Croydon); and Messrs. Ibbetson, Weiss, Hutchinson, Thomas Underwood, A. Woodhouse, Walker, Oakley Coles, Ashley Gibbings, F. Canton, and George Parkinson of London.

The Chairman stated that the West of Scotland Branch had been affiliated by the Business Committee since the last meeting of the Board. The Treasurer was empowered to pay the bill of costs entailed by the Holford prosecution.

Mr. Macleod, of Edinburgh, stated that the Reception Committee of the Scottish Branch was making satisfactory progress with the local arrangements for the General Meeting in August, and that the local Guarantee Fund has reached a total of about £120 The members of the Board present proceeded to form a supplementary Guarantee Fund, with the view of meeting any further expenses, beyond the above-named sum, which could not be legitimately charged to the funds of the Association.

The Hon. Secretary (Mr. F. Canton), stated that he had received a courteous letter from the Royal College of Surgeons of Edinburgh, granting the members of he Association access to the extensive museum, and the use of a convenient room for the Board to meet in. He had also received a communication from the Secretary of the Class-room Committee, granting the use of a large class-room for the General Meetings of the Association, and the use of the laboratory for demonstrations and the display of instruments and specimens.

The resolution of the Midland Branch regarding the negligence of the Board in the matter of prosecuting alleged offenders against the Dentist's Act, was considered, and Dr. Waite was instructed to convey to the Council of the Midland Branch the views of the Representative Board on the subject. Dr. Waite undertook to do so, and said that the explanation would, he hoped, remove any misconception which had arisen in the minds of the members of the Branch.

The name of Mr. H. F. Partridg was removed from the list of members, subject to confirmation at the general meeting in August.

Mr. Rees Price of Glasgow, was elected a member of the Association, and the following list of members recently elected by the Midland Rranch was handed in by Dr. Waite :—Messrs. Frederick Dale, of Sheffield, A. P. Wallis, of Doncaster, and W. Broughton, Edwin Houghton, and Henry A. Mann, of Manchester.

MIDLAND BRANCH.

The annual meeting of the members and associates of this branch was held at Firth College, Sheffield, on the 30th ult., Mr. Roff King, of Shrewsbury, president, in the chair. Amongst those present were—Mr. Joseph Harrison (Sheffield), the president-elect; Dr. Waite (Liverpool), Hon. Sec. of the Branch; Messrs. W. Dykes, L. Matheson and E. H. Williams, of Manchester; W. H. Jewitt and R. E. Stuart, of Liverpool; J. Renshaw, of Rochdale; S. Wormald and T. Gibbons, of Stockport; T. Murphy, Bolton; D. A. Wormald, Bury; Geo. Brunton and J. H. Carter, of Leeds; W. Broughton, Eccles; R. Rogers, Cheltenham; W. E. Harding, Shrewsbury; T. Buckley, Hollinwood; J. S. Harrison, Rotherham; J. N. Manton and J. L. Manton, of Wakefield; A. P. Wallis and F. D. Walker of Doncaster; Shillinglaw, of Birkenhead; J. C. Story, Hull; H. Blandy and D. Stuart Hepburn, of Nottingham; T. Wormald, Oldham; J. H. Jones, Ashton-on-Mersey; T. E. King, York; R. F. H. King, Newark; J. Taylor, Dewsbury; and W. F. Brindly, R. Bunting, F. Dale, R. C. Drabble, L. H. Drabble, B. L. Harding, Frank Harrison, T. Mahonie, J. L. Pike, J. Spotswood, Chas. Stokes, and W. B. Tolputt, all of Sheffield.

Among the visitors present were—Dr. Walker (London), and Messrs. W. B. Macleod (Edinboro'), A. Cocker (Riffenden), A. Howarth (Bradford), J. G. Smith (Brixton), J. K. Milner (Sheffield), &c.

The President, in commencing the proceedings, said the meeting of the Council had occupied more time than had been expected; and as the hour fixed for the present meeting had passed, he would ask them to take the minutes of the last meeting as read.

This was agreed to.

Dr. Waite (Liverpool), then read the following report of the Council :—

"In coming before the members and associates of the Midland branch of the British Dental Association, the Council are happy to report a continued steady progress during another year.

"We meet here to-day upon the invitation of our Sheffield brethren, conveyed to us, at the last anniversary, by our faithful and active friend Mr. Mahonie, who from the first has taken a very deep personal interest in the prosperity of the British Dental Association, and it is due to our friends here to state that all the arrangements for the celebration of this Fourth Anniversary have been made, and carried through by a Committee of local practitioners.

"The past year has recorded several indications of vigour and activity among the dentists of the Midland district. The most important event was the extraordinary meeting held at Birmingham in December last under the auspices of the branch. The assembly was large and representative. The demonstrations were varied and instructive. The papers were thoroughly practical and interesting, and the speeches delivered at the dinner were markedly above the average. The whole of the proceedings were successful and satisfactory in every way, and reflected great credit upon the local brethren, who, led on by Messrs. Sims, Huxley, Batchelor, &c., heartily undertook the entire arrangement of the meeting, and in so doing have, as we believe, laid the foundation for more permanent and substantial efforts in that important centre, by-and bye.

"Two other less formal meetings have taken place in Manchester, on the occasion of the Council meeting; at each of these some twenty or more members attended, and matters of practical interest were freely discussed. Opportunities of a similar kind, are, we believe, multiplying in other directions, under the guidance of local practitioners. The Council desire to encourage and help forward by all means in their power, every aspiration toward mutual acquaintance and confidence wherever felt.

"During the past year the Council have elected twenty-nine members to the British Dental Association, and thirty-seven members to the Midland branch. They wish to take this opportunity of expresssing an earnest desire to invite, and conciliate in every possible way, those who may feel disposed to join the association, but who perhaps need the helpful encouragement of some such assurance to lead them to the final step. At the same time they would urge upon the members individually the duty of exercising personal influence upon all their professional friends to induce them to partake in the prestige and privilege of membership.

"Information has reached the Council that there are within the area of the Branch some cases of open violation of the Dentists Act, *e.g.*, persons calling themselves dentists who are not registered under the Act, and who do not hold any qualification entitling them to registration. Seeing that the executive of the British Dental Association have entered upon the the important work of vindicating the law, your Council would in your name declare the opinion that the time has fully come when active steps should be taken to enforce the provisions of the Act in respect of compulsory registration.

" At our Shrewsbury meeting last year some conversation took place in reference to the method by which retiring members of Council shall be selected, After further investigation the Council themselves have been unable to discover any rule that would on the whole work more beneficially than that hitherto employed, viz., that those should retire who attend the least number of times. The matter, however, is one for the members generally to consider, and the Council will be pleased to have a decisive expression of opinion upon it.

"The nominations emanating from the Council are as follows: that Joseph Harrison, Esq., be President, and Henry Blandy, Csq., President-elect for the coming year, and that the annuul meeting of 1885 be held at Nottingham."

Mr. S. Wormald (Stockport) the Treasurer, produced a statement which he said was more satifactory than any which had preceeded it; the subscriptions for 1883 amounted to £11 10s., and the expenses to £8 9s. 7d. The subscriptions which had come in for the present year and balance in hand from 1883, left a present balance in favour of the Society of £16 11s. 8d.

The President, in moving the adoption of the report and balance sheet, said both were most encouraging, and he believed the Branch was on the high road to prosperity.

Mr. D. A. Wormald (Bury) seconded the motion, which was carried unanimously.

The President said in accordance with the rules he now had to ask the members to ballot for the President and Vice-President tor 1885. It would be a mere matter of form, for both Nr. Harrison and Mr. Blandy were so well known and so highly appreciated that their election were already assured.

The ballot box was then handed round, and on its being returned,

The President said: It will be no matter of surprise to you to be told that the ballot is unanimously in favour of the two gentlemen named.

Mr. Joseph Harrison proposed the re-election of Dr. Waite as honarary secretary and of Mr. S. Wormald as treasurer, and said no words were necessary from him to commend the resolution to the members.

Mr. R. Rogers (Cheltenham) seconded the motion, which was carried unanimously.

The President said three members retired from the Council, and until some alteration was made in the mode of election, the present election would have to be conducted under the old plan. The retiring members were Messrs. Campion, Brunton, and Stewart. Mr. Campion's absence from some of the Council meetings had been entirely caused by ill-health. Each ot the retiring members was eligible for re-election, and all were good men and true.

Dr. Waite suggested that Mr. Macleod and Mr. Rogers be asked to act as scrutineers.

This was agreed to, and at a subsequent stage of the proceedings Mr. Macleod and Mr. Rogers handed the result of the voting to the President, who announced that Messrs. Stewart, Brunton, and Campion had been re elected.

On the motion of Mr. W. Dykes, (Manchester) seconded by Mr. W. Broughton, (Eccles) a vote of thanks was tendered to the officers and members of the Council.

The President, in calling upon Mr. Harding to propose a resolution with reference to an alteration in the mode of electing members of the council, said the matter had more than once been under the consideration of the Council. They were afraid that the present plan was defective, but they could not at present see how it could be altered for the better. Perhaps Mr. Harding would be able to throw some light on the question. And the Council would be glad to support him if his plan were better than their own.

Mr. W. E. Harding (Shrewsbury): At our last meeting I made some remarks respecting the way in which the retiring members of the Council are selected. It was then ruled that I was out of order, and that I must bring the matter before the Annual Meeting next year. With that object in view, I beg to submit the following resolution: "That it is the wish of the members that the gentlemen elected to the Council should retire in the order in which they are elected, each being always eligible for re-election."

It is usual in every society, company or body which is governed by a directorate or council, that the members of the council or directorate retire in rotation, and if I may use such an expression—go before their constituents for re-election. I have been unable to meet with any instance, either in the scientific or in the commercial world, where the members of the council do not in rotation go before their constituents for re-election. I do not mean to contend that there should necessarily always be a change in the constitution of the Council; but the members of the Branch ought to have, at certain stated intervals, an opportunity of re-electing them, or of electing others to take their place. I would not, for a moment suggest anything that would embarrass the Council in the management of this Society; they have had, I know, great difficulties to encounter in starting it—want of union, apathy amongst the members of the profession, and other causes—and it was, no doubt, a wise decision on their part, in the early history of the Society, to keep as many workers as possible upon the Council. We have now, however, been four years in existence. The infancy of the Society has passed; it is now in its youth; and I think now we ought to enter upon a more business way of selecting the members of the Council. Under the present management a man when once a member of the Council, no matter how objectionable he may be to the majority of the members, provided he attend every meeting, may continue to be a member for the remainder of his life. I don't think that is right. Every member of the Council, no matter how many meetings he has attended, should have come up for re-election at certain stated periods; and my resolution is that the members of the Council retire in the order of their election and their service on the Council. I may add that I have brought this matter forward entirely on my own responsibility, and that I have not even asked any gentleman to second the resolution. I leave it to any member to second it; and if it is not seconded, it will, of course fall to the ground. Let me again say that I do not in any way wish to embarrass the Council.

The President: The Council are quite as anxious as Mr. Harding is to have the matter thoroughly ventilated. As to a seconder being found for his resolution, if it should become necessary I will second it myself so that the matter may be thoroughly discussed. I shall be glad to hear what other members think about it.

The career of 1,000 dentists has been traced to the following results: 163 died before they reached middle life; 643 attained fair success; 57 made a competence; 27 died from intemperance and other vices; 96 failed entirely, and three committed suicide.

Nineteen States have laws regulating the practice of dentistry.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY GENERAL MEETING.

HELD MAY 12TH, 1884.

C. TRUMAN, EEQ. M.A., M.R.C.S., (President) in the Chair.

THE minutes of the previous meeting were read and confirmed.

Messrs. Lenhartson and Wrighton having been proposed at the previous meeting, were unanimously elected members of the Society.

The following gentlemen were proposed as members :—Mr. Whittaker, by Mr. Rilot, seconded by Mr. Buckland ; Mr. A. J. Woodhouse, by Mr. Buckland, seconded by Mr. Goadby.

Mr. W. England was unanimously elected Curator to the Museum and Library of the Student's Society.

The Secretaries announced the gift to the society of two books, viz.—" Kingsley's Oral Deformities," presented by the president; and " Heath's Injuries and Diseases of the Jaws," presented by the author. Much applause greeted this announcement.

The new laws of the Society having been finally discussed, were passed, with but few amendments.

The President next made known, that the council of the society had recommended that a Conversazione should be held late in June or early in July next, and the matter was now to be submitted to the General Meeting for their approval. It was unanimously decided that the Conversazione should be held as proposed.

Mr. Robins explained a case, and showed the models of an upper and lower jaw, of which the bite closed only on the second and third molar teeth; also a tooth that had given unusual difficulty in extraction.

The President then called on Mr. Campion to read his paper on " The Surgical and Mechanical Treatment of Cleft Palate." The subject proved such an interesting one, and was rendered so lucidly by the writer, that it brought forth a very lively discussion, in which the following gentlemen took part :—The President, Messrs. Robins, R. H. Woodhouse, and Hern. At the conclusion of the discussion, Mr. Campion replied. A vote of thanks to Mr. Campion for his excellent paper, was proposed by Mr. Stainer, and seconded by Mr. R. H. Woodhouse.

The President made known that the next meeting would be held in October.

APPOINTMENT.

HONORARY DENTIST.

On the recommendation of the medical staff, Mr. George Thomson, L.D.S., was appointed honorary dentist to the Melbourne Hospital.

The following appointments have been made to the National Dental Hospital, 149, Great Portland Street, W.:—

Mr. Walter Tyrrell, L.R.C.P., M.R.C.S.
Mr. F. W. Hewitt, B.A., M.B., M.R.C.S.
Mr. C. W. Glassington, M.R.C.S., L.D.S. Edin.,

have been appointed Anœsthetists in addition to Dr. H. F. Winslow.

Mr. W. T. Patterson, L.D.S., Eng., has been appointed House Surgeon.

ANÆSTHEISTS.

Monday—Mr. Glassington.
Tuesday—Mr. Tyrrell.
Wednesday—Mr. Hewitt.
Thursday—Dr. Winslow.
Friday—Mr. Tyrrell.
Saturday—Dr. Winslow.

VACANCIES.

Owens College, Manchester.—Lecturer in Dental Surgery. Applications by June 16th.

Owens College, Mauchester.—Special Lecturer in Dental Mechanics and Dental Metallurgy. Applications by June 16th.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

EXTRACTION OF TEETH BY THE NUN'S METHOD.

To the Editor of the "British Journal of Dental Science."

Sir,—Permit me through the medium of your valuable journal to thank Dr. David for his able lecture on the above subject, an abstract of which appeared in the April and May numbers of the "British Journal of Dental Science."

The doctor's remarks about india rubber rings are, I think, particularly opportune. Only a few weeks ago a case came under my notice where both the central incisors were near being sacrificed through being embraced by one of these bands, the patient having received no instructions from his dentist as to the removal of the band, &c.

There is one little matter upon which the doctor touches, about which I should like some further information. On page 401, May number, I find these words: "At a period not far removed from the time at which they are normally shed, milk teeth have no roots left, the under-lying crown of the permanent tooth having worn away." Now, sir, I believe the accepted theory is, that the roots of teeth are *absorbed* away by the agency of a growing prapilla, termed the absorbent organ. If I am wrong, perhaps some of your numerous readers will kindly set me right, and oblige yours,

SUBSCRIBER.

CHEMICAL FORMULA FOR STEATITE.

To the Editor of the "British Journal of Dental Science."

SIR,—In reply to Mr. Weber's letter in your last issue, the Chemical Formula of Steatite is $Mg.^{3}\ H^{2}\,(Si.\ O^{3})^{4}$. It is sold as "Cretao Gallica," by chemists. Yours, &c.,

WM. BONALLO.

Cranlington Hall, Newcastle-on-Tyne,

PREVENTION OF NAUSEA.

To the Editor of "The British Journal of Dental Science."

SIR,—In reply to "L.D.S., Eng." in the March number of the "The British Journal of Dental Science," I would suggest *aqua camphora* as a remedy, to be used in rinsing the mouth, and as a gargle, immediately before taking an impression. In my practice it proves infallible in preventing nausea and retching. Yours, &c., H. B. VAN DORN, M.D.

Red Bank.

[Unavoidably delayed in publication.—ED.]

SIR,—I find that a great many dentists make use of "Member of the College of Dentists of England," after their signatures.

Can you inform me if there is such a college in existence, and if so, the address of the secretary, or forward me a copy of the rules? If so, you will greatly oblige. Yours, &c.,

Bradford. A STUDENT.

[There was a College of Dentists of England twenty years ago, but it amalgamated with the Odontological Society of

Great Britain. It need hardly be said it is not a registrable qualification.—Ed.]

To the Editor of "The British Journal of Dental Science."

Sir,—In a recent issue of "The British Journal of Dental Science, I find Dr. Naismith speaks of the "rapid decay of the teeth of young mothers," and asks "how it would do to prescribe phosphate and carbonate of lime." It is just the prescription to be administered in such cases. Simple liquor calcis as much as the stomach will bear each day; largely dilute with milk if convenient; if not convenient, use water.

It will furnish bone and tooth substance for the fœtus, and prevent, to a great extent, the nausea so persistent during pregnancy.

Half a teaspoonful to a teaspoonful of liquor calcis, dilute in a pint of milk, and fed to an infant each day, will give it good bone and good teeth, and prevent much of the sickness, and especially the bowel complaints which infants are liable to.

Yours, &c., G. W. Mattison, M.D.

Middleville, Mich. U.S.A.

To the Editor of the "British Journal of Dental Science."

Sir,—'Steatite,' or 'Soapstone,' is a silicate of magnesia, $Mg\ O_6\ Si_4\ O_5$, by which formula it may be known to Mr. Weber.

French chalk is also, I believe, a silicate of magnesia, closely akin to steatite. I am, &c., Chas. E. White.

To the Editor of the "British Journal of Dental Science."

Sir,—I would feel obliged if through the medium of your Journal some one having had experience in cases of Atrophy of the Teeth, would inform me if there is any possibility of obtunding the sensibility of atrophied teeth such as I describe.

The patient, a young lady about twenty-two years of age, is subject to extreme sensibility in the superior incisors and cuspids, these teeth having scarcely any enamel on their labial surfaces, and instead of the usual normal contour, they present a perfectly smooth and flat surface of enamel, which in the central incisors is stained a deep brown colour. The least pressure to any part of these teeth gives severe pain, the centrals being even sensitive to the touch of the finger-nail. The cutting edges are worn down slightly, owing to the edges meeting the lower incisors. Having tried the usual remedies without success, I would be grateful for any hints on the subject. I am, sir, yours truly, A Subscriber.

COMMUNICATIONS RECEIVED.

J. N. Stoner; Dr. Dorn; T. Buckley (Oldham), Walter Harrisson (Hastings), Chas. E. White (London), F. Huet (Manchester), W. F. Elliott (Birmingham), Geo. Thomson (Melbourne), A. Knight (London).

British Journal of Dental Science.

No. 394. LONDON JUNE 14, 1814. Vol. XXVIII.

TREATMENT OF PYORRHŒA ALVEOLARIS.

By A. W. Harlan.*

On account of the uncertainty in the mind of the dental specialist with reference to the treatment of that variously named and ill defined disease, known as pyorrhea alveolaris, Rigg's disease, alveolitis, phagædena pericementii, etc., the writer desires to offer a few suggestions relating thereto, which may tend to give more confidence to those who have had but little success in their efforts to restore to health the tissues which are so often ravaged beyond repair. It will not be necessary in this report to say anything of the etiology of the disease under discussion, beyond the expression of the belief that it is infectious, and that micro-organisms are at least partially responsible for the disastrous results which are sure to follow if it is not checked before the complete destruction of the alveoli.

It is now nearly two years since I became convinced that the methods of treatment advocated by various writers, including that of Dr. Riggs himself, were not the most beneficial to the majority of cases presenting themselves. At that time I was engaged in making some experiments with the essential oils and eucalyptus globulus, to determine their value as antiseptics. During these investigations it occurred to me that iodide of zinc, which then, as it does now, occupied only a few lines in the "Dispensatory" and works on medical chemistry and therapeutics, might be the remedy which would rob the hydra-headed monster of its terrors for the dental surgeon. I procured a sample and at once made solutions of xii. and xxiv. grs. to the oz. of water, and waited for the first case. It soon came. My first experience with it was in the fall of 1881, and the first case was that of a lower central incisor; the gum was loose two-thirds of the length of the root on the labial surface, pus exuding on pressure, and the alveolar process wasted half the length of the root; there was little, if any, deposit on the labial surface of the root, and no salivary calculus on any of the teeth, except the buccal surfaces of the superior third molars. I carefully cleansed the root and excised the edge of the bone, then dried the pocket, after washing it out with water, and injected into it three drops of the first-named solution. The patient was directed not to squeeze the gum, but to return in four days, and let me see him. When he returned, I dried the gums and applied pressure, and found scarcely any discharge. I repeated the former treatment, omitting the scraping and probing, and when he returned the second time there was no discharge whatever. The pocket had commenced to fill up, and the gum was beginning to re-attach itself to the tooth. The patient returned again after eight days, and there remained hardly a trace of the disease. To all intents and purposes it was cured. After the lapse of more than twenty months the gum remains firm, and is of normal color, without depression or any external evidence of having been diseased at all. The remarkable manner in which this remedy exerted its beneficial influence in this case caused me to practically discard all other therapeutical agents in the treatment of pyorrhœa, except as shall be hereafter mentioned. I found from a study of cases that when a patient was suffering from an acute attack of pyorrhœa the pockets should first be packed with iodoform and eucalyptus, iodoform and oil of cinnamon, or to be thoroughly syringed with a one to three-grain solution to the ounce of water, of chloride of alumina, which is a good disinfectant and astringent, and also an excellent bleacher for discolored, pulpless teeth ; but the method of using it in such cases will be dwelt upon in the discussion on operative dentistry. This method of treating the pockets in acute cases relieves the patient of present suffering, and also reduces the swollen gums to their normal size. In three or four days the sanguinary deposits may be removed and the edges of the alveoli scraped or burred off. The pockets should then be syringed with peroxide of hydrogen, which will cleanse them perfectly, and at the same time bring into direct contact with the diseased pocket a germ-destroyer and antiseptic not less potent than any which can be named. After drying the gums, the pockets should be injected with the previously named solution of iodide of zinc, one, two, or three drops, or more, in each pocket. When the patient returns on the fourth day the gums must be dried carefully, and a fine cone of cotton or bibulous paper be moistened with peroxide of hydrogen and gently pressed into each pocket. If there should be any effervescence, it demonstrates the presence of pus, and each pocket must be again injected with the iodide of zinc solution. Peroxide of hydrogen, for all clinical purposes, is a perfect detector of pus, even better than the microscope, because those not familiar with it can see with the naked eye the bubbling produced by H_2O_2 when brought into contact with pus.

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*A paper read before the American Dental Association, August, 1883.

In chronic cases, after the removal of the diseased bone surgically and the cleansing of the roots are effected, the pockets should be syringed with H_2O_2 to be followed by the injection of the xxiv. gr. solution of iodide of zinc in precisely the same manner as has been heretofore described. In very bad or almost hopeless cases, I use even a stronger solution, grs. xlviii. to the ounce; and when the gingival margins present a ragged border or cone-shaped slit, I apply the pure granular iodide to the edges of the slit once in three days, and soon find a perfect restoration of the normal festooning of the gingival margin. The injection into the pocket is to be repeated every fourth day. The length of time required for the cure of cases where two to four or five teeth are involved, varies from twelve days to four or five weeks, supposing the patient to be in ordinary good health. In those cases where constitutional treatment is required each must be met according to the indications, and the intelligent practitioner will decide for himself just what is needed during the period of local medication. The worst case that I have had during the past two years was where sixteen teeth were diseased, and it required constant care from March 26 to June 12, 1883. It was a case of three years' standing, and had been under the care of two gentlemen before it came to me, and the patient thought her gums were worse after leaving them than before treatment was commenced.

To be continued.

SWELLING OF PAROTID GLAND, OCCURRING DURING THE ERUPTION OF A WISDOM TOOTH.

ABSTRACT OF A LECTURE

By Dr. Paul Fabre, of Commentry.

In the case under review there were signs of true inflammation of the parotid gland.

Steno's duct was obstructed, and the inflammatory swelling of the region entirely prevented the flow of saliva. Among recorded cases of complications arising from the eruption of the third permanent molar, no mention is made of inflammation of the parotid. This case is then detailed.

A a miner, aged 25, was born at Commentry in 1858. Had mumps when a child. Lower jaw had projected somewhat beyond the upper. Both upper wisdom teeth are entirely erupted. The anterior two-thirds only of the lower left one projects beyond the gum. Dentition occurred normally. All his teeth are regular and well formed; five are missing, these have been extracted.

On January 22nd, A. called, and presented himself for treatment, complaining of a sore throat which he had had for the last two days. His pulse was 96, and his tongue furred, the back of the throat was red, both tonsils were much swollen and inflamed, and especially the right one. Great difficulty existed in opening the mouth.

The next day (23rd.), his pulse was 120, and the temperature considerably raised. The whole of the left side of the face was swollen; the parotid region was œdematous, tense, hard, reddened, and exceedingly painful. Patient found it almost impossible to get his mouth open.

On the 24th, temperature was 102° 5 F., with a pulse of 120. There were violent throbbings in the whole of the right side of the face, together with a persistent dryness of the mouth. By means of a finger introduced into the mouth it was possible to feel on the right side a thick hard cord in the situation of Steno's duct. This side of the mouth was said by A. to be the drier of the two. On a level with the opening ot Steno's duct into the month, opposite the second molar tooth, the finger detected a sort of circular cushion projecting from above another soft globular swelling.

The cheek was of an enormous size, and gave anxiety lest there should be the formation of an abscess in the parotid.

On the 25th, patient appeared with the swelling of the cheek entirely subsided. Steno's duct was no more prominent or affected than on healthy side. A small quantity of pus exuded on pressure from gum along the lower jaw on right side. Beyond the second molar the gum forms an irregular projecting mass raised by the wisdom tooth, which could be felt by the finger.

On February 4th, the tooth was almost entirely cut, and the inflammation had subsided.

At the present time (March 6th.) the posterior part of the tooth is still hidden under the gum, there is no trace of inflammation, no pain on pressure or during the act of mastication. Patient states that he had some pain at meal times for over a fortnight after the disappearance of the swelling.

REMARKS.

1. Accidents of this kind are met with, as a rule, when wisdom teeth are cut between the ages of 18 and 25, this patient was over 25.

2. The present instance, just as in the immense majority of cases, a lower tooth gave rise to all the morbid phenomena.

3. A marked swelling of the parotid accompanied the lesion of the lower jaw, and, contrary also to usual rule, the cervical glands were enlarged without there being any bony lesion.

4. Chassaignac mentions two forms of gingivitis due to the faulty eruption of wisdom teeth . . (a) *enkystement* encysting. (b) *enchatonnement* setting in gum, just as a precious stone; to these may be added a third *encapuchonnement,* the formation of a hood of mucous membrane.

Pus exuded on pressure from the free outer border of the gum along the lower right *molar* teeth.

6. The general and local symptoms were of a nature to lead to the conclusion that an abscess was forming in the parotid, and yet all these symptoms disappeared with the greatest rapidity.

ON THE INFLUENCE OF MICRO-ORGANISMS IN THE PRODUCTION OF CARIES.

By Arthur S. Underwood, M.R.C.S. and L.D.S., Eng.,*

(Lecturer on Dental Anatomy and Physiology at the Dental Hospital of London Medical School, &c.)

Mr. President and Gentlemen,

Mr. Milles and myself have so much to lay before you to-night in the form of evidence concerning the part played by micro-organisms in the production of caries that we feel confident you will excuse us if we go straight to the matter in hand without an unnecessary waste of time in the form of preamble.

It is, however, necessary to state that we only propose to discuss the purely pathological side of the question to-night, and that only so far as the dentine alone is affected.

As we stated in 1881, we still consider that the initial stage, that is, the enamel destruction, is probably little more than a chemical solution of the tissue by an acid or acids; but we are inclined to believe that the greater part of such acids are the result of fermentation, a process which is entirely dependent on nitro-organic life, has as been amply proved by Pasteur, Lister and others.

As the result of the decomposition of albuminoids, numerous substances are formed in the mouth—peptones and other similar bodies, fatty acids, acetic, formic, butyric, malic, lactic acid, &c., and in some cases sulphuretted hydrogen and ammonia, are produced in large quantities. This decomposition is directly produced by the vegetation of micro-organisms.

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*Read before the Odontological Society of Great Britain.

A very simple illustration of this fact is obtained by filling two bottles with neutral saliva and bread, and rendering one aseptic, either by adding carbolic acid or boiling, or any other process of the kind. The micro-organic growth which will take place in the impure one will produce a large quantity of acid; the pure one will remain neutral. The most constant source of an acid reaction in the mouth is undoubtedly micro-organic fermentation.

This is not, however, the main subject of to-day's paper, and therefore we shall content ourselves with this passing allusion to it.

We cannot, however, refrain from expressing our gratification at the careful attention this subject has received from the profession, both here, in America, and on the Continent. Professor Mayr has worked out the chemical aspect of the question with great care and exactness; Mr. Tomes has done much in the direction of the effects of organisms in the soft tissues of the teeth; Mr. Spence Bate has given us many valuable suggestions in his able and exhaustive summary of dental science at Plymouth last year; Mr. Sewill has thrown out valuable conjectures upon the remote etiology of caries; and Dr. Miller, of Berlin, has done an immense amount of microscopical work, contributing a large array of evidence.

We have not been able until now to present our own views in full because many of our experiments required a long time to verify and confirm; some afforded perplexing and almost contradictory results, requiring a long time to clear up, and involving much repetition; and we may add, in explanation of the apparent decay, that what takes but little time to write or say often requires months and even years of disappointment and patience to work out.

In the autumn of 1881 we were only justified in speaking with any amount of positiveness upon one point, namely, the actual presence of micro-organisms in carious dentine. This one fact, and the evidence in support of it, formed the body of the paper we ventured to present to the International Congress. Micro-organisms were found in every fragment of carious dentine of which we cut sections, and we had cut immense numbers; the leptothrix of MM. Leber and Rottenstein was, we found, a superficial growth.

Another fact of scarcely less importance, but one supported by far less evidence, was that the agencies to whose action caries had up till then been attributed by a large majority of scientific opinions, namely, certain acids, were unable to produce any such changes upon teeth exposed to their action alone, although the enamel protection was removed, and the acids employed were those present in the mouth. We had read many allusions to caries produced in teeth out of the mouth by artificial means; we employed the means indicated (whenever they were indicated, which was rarely), with the addition that we did so under absolutely aseptic conditions; we repeated the experiments, and the result of (in some cases) years of exposure was that no change that we could detect took place. Here was a second, but a negative fact.

The third fact obviously required was a positive one: it remained to inoculate dental micro-organisms into the flasks and observe the result. We did so, and the result was change in the exposed dentine, but so slight that we could not succeed in cutting a section; still, at the time of our paper of 1881, we firmly believed that this change, when allowed to become more intense, would prove to be caries. Of this fact we felt bound, however, to speak very cautiously, and for the last two-and-a-half years we have employed every means in our power to clear it up—with what result we shall endeavour to make plain to you to-night.

We are anxious that you should keep clearly before you four main issues, upon which all the theory which we suggested to you in 1881 depends.

1. That certain forms of micro-organisms, namely, micrococci, rod-shaped and oval bacteria, and short bacilli are invariably present in carious dentine.
2. That these micro-organisms extend into the tissue as far as does the caries.
3. That no agents can be made to produce a change resembling caries in the absence of such micro-organisms, *i.e*, under aseptic conditions.
4. That under septic conditions a change can be induced which, although we are not prepared to call caries, does in some particulars resemble it; teeth in which this change has been produced we shall submit to you to-night, and also suggest to you why we hesitate to call it caries.

These four points once established upon reasonable evidence, we shall ask you to consider whether we are not justified in deducing from them the conclusion that micro-organisms play an important part in the production of the disease as we see it and are called upon to treat it, and that their active presence is an absolute essential to its production.

We may add incidentally that we never suggested that no other agency assisted in the process, although a recent writer attributes some such absurdity to the advocates of the germ theory. We do not consider ourselves justified in wasting your time over such a digression. The first point to discuss then, is the constant presence of micro-organisms in carious dentine. Upon this point the evidence submitted to the profession by us in 1881 was very strong. We were then able to state that, since we had succeeded in properly cutting and staining sections, we had always discovered micro-organisms. The appearance was not caused by softening agents, because the teeth were cut fresh and immediately after extraction. The number of sections cut by us between 1879 and 1881 was so great that we were convinced that the phenomenon was constant.

Since then, Mr. Charles Tomes has, we believe, made some investigations which have led him to concur in this constant presence.

Dr. Miller, of Berlin, has cut a very large number of sections of carious dentine, with a result which is completely confirmatory of our assertion that micro-organisms are invariably present. In fact, this point has been confirmed by every careful observer, and may be considered to be completely established.

(To be continued.)

NOTES ON THE ALVEOLO-DENTAL MEMBRANE.*

By FRANK HARRISON, L. D. S. Edin., Sheffield.

MR. PRESIDENT AND GENTLEMEN,—Before entering upon the subject matter of my paper, I consider a few remarks are due to you on the circumstances which have led so young a practitioner as myself to address you. Young men, as a general rule, are afraid of reading papers before a learned Society like this, on the ground that they have nothing new to communicate, and are afraid of the criticism which they expect will follow the delivery of their compositions. I beg all such to put away their fears. The criticism (if any) which may follow their papers is beneficial to the author, and the study and work necessary to enable any one, and especially a young man, to compose the paper, are more beneficial still. I speak from experience. The amount of good I have derived during the pleasant hours spent over the production of this paper, has been far greater than any amount of benefit that I can flatter myself its delivery may do you. I would therefore call upon all young men to lay their fears aside and come forward and do their best. At the same time, I assure you, that in coming before a large and important gathering such as this, I do not under-estimate the responsibility which devolves upon me.

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* Read at the Annual Meeting of the Midland Branch at Sheffield, on the 30th ult.

It is not my intention to give you any views of my own, but to lay before you those of various authors. I have endeavoured, as far as possible, to limit myself to those points which I have found capable of demonstration, but there are exceptions to every rule, and in this case I will take the exception first, and read you some extracts from a paper written in the year 1856 by Mr. Spence Bate, whose absence to-day we all so much deplore:—

"What Professor Owen calls the cementum or ossified capsule, the late Mr. Nasmyth called the persistant capsular investment, or crusta petrosa. But the real capsular investment lies over both, and is the membrane figured by Nasmyth as 'the membrane external to the crusta petrosa.' It is the membrane external to, and not the corpusculated tissue next upon the enamel that was originally the capsular investment of the pulp." Later on in his paper he says: "The distinctiveness of character between the peridental membrane of the tooth and the periosteum of the alveolus, is strongly exhibited in the fact that an ossific union cannot take place between the two membranes, that is, anchylosis between the teeth and jaw bone does not (cannot) exist among the mammals; this, which is true under normal circumstances, appears to hold good also under the aspect of disease. Thus we perceive that if the peridenteum be excited to generate bony tissue on the surface of the fang, an opposite action is provoked in the periosteum, and absorption of the alveolar wall is the result. This appears to demonstrate an antagonistic principle existing in the two closely situated membranes—the periosteum, and that which is extended over the fangs of the tooth, the latter originating from the capsule of the undeveloped tooth, and still being connected with the mucous membrane of the mouth as a continuation of the gum. The peridenteum, therefore, must be viewed not only in its development, but in its persistent character as a dermal tissue, while the periosteum belongs to the internal or osseous system." I have quoted at some length from this very interesting paper, which I am sure is well worth careful consideration.

My next note is from Mr. Salter's Dental Pathology, 1874, where it is stated that the periosteum lines the socket of the tooth and ministers to its nutrition, and to that of the surrounding alveolar process. It has been customary to take too artificial a limit and to make too exact a definition of the fibro-vascular tissues surrounding the fangs of the teeth, and to divide them into peridental membrane, periosteum, endosteum and gum. With the exception of the mucous membrane of the gum, they are really one and continuous. The membrane which intervenes between the alveolus and the tooth fangs has however, some characteristics which distinguish it from ordinary periosteum. It is entirely devoid of fat cells, it consists of connective tissue in which the elastic element is wholly wanting, and it has a very large supply of nerves.

I will next take the careful observations by Carl Wedl, with regard to the structure of the alveolo-dental membrane. "The root membrane or periosteum of the root is a delicate connective tissue membrane, containing an abundance of vessels and nerves; it is intimately connected with the sub-mucous layer of the gum, and with the periosteum of the alveolar process, and covers the root of the corresponding tooth.

"It is of unequal thickness, being somewhat thicker near the gum and at the apex of the root than in the intermediate portions. The blood vessels of the root membrane originate from, and have their exit into three different localities, namely, (1) numerous tufts of vessels having a longitudinal direction are given off from the vessels of the sub-mucous connective tissue of the gums; (2) similar tufts arise from the dental vessels which supply the pulp; (3) vessels enter from and empty into the osseous vessels of the porous alveolar wall."

Professor C. F. W. Bödecker has carried out his researches to great perfection, and with your permission I will give you several extracts from his Histology of the Alveolo-Dental Periosteum. He describes the pericementum (root membrane) as a formation of connective tissue, identical with the periosteum which covers all bones. It consists of a layer interposed between the roots of the teeth and their corresponding bony alveoli, and is common to both. It is continuous with the connective tissue—the so-called sub-mucous layer of the gum and with the periosteum of the maxillæ. Its fibres are connected with the cementum of the root as well as with the wall of the alveolus.

A few writers have described the pericementum as a double membrane, one of which belongs to the root, the other to the alveolus, but I have not been able to see anything that justifies such a separation. The course taken by the connective tissue bundles is slightly wavy and oblique, starting from the cementum, and running upwards to the alveolus.

The bundles of this tissue are very dense, without many decussations. The parallel direction of the bundles begins to change into a diverting one at about the height of the border of the socket, where the bundles become coarser, decussate, and thus produce the elastic connective tissue cushion termed the gum. Professor Bödecker then describes two varieties of pericementum—(1) the Myxomatous and (2) the Fibrous. I have not yet had the pleasure of seeing the first variety, and shall therefore confine my notes to the fibrous pericementum.

" The bundles of fibrous connective tissue may be uniform in width throughout the whole pericementum, or there exists a zone of myxomatous or indistinctly fibrous character close around the cementum. The bundles are built up by a number of fibres which hold a varying amount of protoplasmic bodies, as a rule, more numerous the nearer to the cementum. In a few instances I have seen rows of osteoblasts, the refracting power of which was considerably augmented. The fibrous variety of the pericementum also contains fat globules, sometimes, in a surprisingly large quantity.

These few notes on the root membrane may well be concluded with the words of Mr. Charles Tomes—

" It should be borne in mind that the tooth pulp and the tissue which becomes the root membrane have sprung from the same source, and were once continuous over the whole base of the pulp."

A recognition of this fact makes it easier to realise how it comes about that their vascular and nervous supplies are so nearly identical.

⁂ The paper was illustrated by original drawings and microscopic preparations of the root-membrane of man, the cat, and the rabbit. Sections of the normal human jaw with the soft parts attached, showing the relations of the alveolo-dental membrane to the tooth and the alveolus, were also exhibited.

THE SURGICAL MECHANICAL TREATMENT OF CLEFT PALATE.*

By Mr .Campion.

Continued from p. 497.

In 1862, Langenbeck published his experiences of operating on the hard palate, and laid particular stress on detaching the periosteium with the mucous membrane. He differed from Warren in raising his flaps from the alveolar processes towards the cleft, instead of working outwards from the edges of this fissure. This, however, is merely a difference in detail, and of slight importance compared to the novelties brought forward by Mr. Thomas Smith, of St. Bartholomew's Hospital, in a paper read before the Medico-Chirurgical Society in 1868, the object of which was " to extend the benefits of the operation to patients of tender years, and to those deficient in physical courage, or in the power of enduring pain." This he proposed to effect by the use of chloroform, whereby he claimed that the operation might be performed on very young children, and "with far greater rapidity and precision than when the surgeon is dependent on the self-control of even the most courageous patient." Before this time it had been considered impossible to use an anæsthetic, from a fear that suffocation would be caused by the blood entering the air passages. This fear Mr. Smith showed as groundless. He says: "No symptoms have been observed that would indicate that blood had entered the larynx, though frequently blood has been vomited after the patient has been put to bed." Mr. Smith also described the gag which now bears his name, by which the mouth can be kept open and the movement of the tongue controlled, the use of which is now in some form or other considered essential to the due performance of the operation. Up to this date, the time of operating was almost invariably postponed until the age of puberty, or even after, in order that the surgeon might have the advantage of the patients', self-control to assist him in his troublesome work. But the use of an anæsthetic renders it possible to operate in infancy, from three to four years being an age at which the closure of a cleft is now commonly undertaken.

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*A paper read before the Students' Society of Dental Hospital of London. May 12th, 1884.

A few years before his death Fergusson introduced another operation for closure of the cleft in the hard palate. He made an incision down to the bone on each side of the fissure, about a quarter of an inch from, and parallel to its margins. The bone was then divided longitudinally with a chisel and the two edges of the cleft, previously refreshed by paving, forced into contact in the middle line. The two portions of bone with their mucous membrane attached, were kept together by ligatures passing through them, or even by plugging the lateral gaps with lint. This plan has never come into much favour with surgeons, there being a danger of necrosis following from the separation of the bone.

The operation is now performed by Mr. Smith, as follows: The patient is placed on the table in a good light, and chloroform administered, and when thorough narcosis has taken place, the gag is introduced and screwed open, the rings of the same being held by the thumbs of the assistant, who supports the head. One of the flaps is then seized by the forceps, and the paring done with a thin and narrow double-edged knife, which is made to pierce the tissue close to its margin, and cut first down to the uvula, and then up towards the apex of the fissure. The process is then repeated on the other side, and in favourable cases it is often found possible to remove the parings of both sides in one piece. The sutures, which are of horse hair and silver wire placed alternately, are next introduced, and each tied as it is placed in position. The wire is passed by the aid of a sharply curved tubular needle (shown) which is thrust backwards through one flap, and then forward through the opposite one. The wire, which is carried on a wheel in the handle of the instrument, is then protruded from its point and caught by the forceps; the needle is then withdrawn, leaving the wire across the fissure; this is then twisted up and another suture introduced in the same way. The horse-hair ligatures are passed by a needle (shown), bent at right angles, and set in a handle, having an eye close to its point. This is used in the same way as the tubular needle, and after the ligature introduced by it has been caught by the forceps and drawn out of the mouth, the needle is withdrawn from the flaps, leaving the ligature in situation ready for tying; this is then secured, and the next proceeded with in a similar manner.

Should the fissure extend to the hard palate, the muco-periosteum is detached from the bone by the aid of a blunt raspatory introduced between them at the margins of the fissure, and when this has been sufficiently accomplished, the flaps are secured by silver sutures. Lastly, an incision is made on each side of the soft palate so as to make it perfectly loose, and take all tension off the sutures.

No systematic division of the muscles as recommended by Fergusson or Pollock is here undertaken, but it is probable that the incisions in the sides of the soft palate effect the division of the separate levators.

If we now turn to the history of the mechanical treatment, we shall find, as we might not unnaturally expect, that it extends back to a much earlier date than the surgical. The first definite description of an obturator, was given by the celebrated French surgeon, Ambrose Paré in 1579. It consisted merely of a metal plate, gold or silver, covering the aperature of the hard palate, and supported in position by a sponge fixed to its upper surface, "which, when it is moistened with the moisture distilling from the brain, will become more swollen and puffed up, so that it will fill the concavity of the palate, that the artificial palate cannot fall down, but stand fast and firm as if it stood of itself."

(To be continued.)

The Boro-glyceride, first described by Professor Barff, is a valuable disinfectant and would be of great service in aseptic dentistry.

Reflections from the Surgery.

CASE UNDER THE CARE OF FERDINAND NEHMER, L.D.S., NEWCASTLE.

A BOY of fourteen came to me early last month (May), to have an upper right bicuspid tooth stopped and I then noticed that the central lateral and canine of the same side and in the same jaw were absent, their position being occupied by artificial substitutes on a gold frame. The jaws otherwise had their normal confluent.

On questioning him as to how he came to lose them so early, I learned that he had never had them, although their temporary predecessors were not wanting, neither could I obtain any history of a blow upon that side of the mouth, which might have caused injury to the developing teeth. These particulars were confirmed by the boy's father, who stated that the teeth had never been erupted. The gum was rounded and firm, without fulness or other indication of their presence beneath the surface.

It appeared, however, that two years ago a swelling manifested itself in the gum, in the portion where the missing teeth might be expected to lie, but this subsided in a fortnight without giving either trouble or inconvenience. There is nothing perhaps very remarkable in the absence of the canine, as it is by no means uncommon to find it arriving late in the mouth, but its absence taken conjointly with that of two incisors seems more significant. It is I presume impossible to say what is the reason of detention, whether one or more of them have become encysted, as the history of the swelling might lead one to imagine; or whether their eruption is retarded by mechanical difficulties, it is equally impossible to more than guess.

Mr. Nehmer remarking upon the peculiarity and interest of the case, suggests that brother practitioners, meeting with such cases, they might elucidate the pathology of these cases, were they topublish them. And further it would be of great practical value if such cases throw any light upon the question as to whether these teeth are likely or not to be erupted later on.

The "Archives of Dentistry" continue to flourish, they have added "a fresh attraction" in the form of a collection of queries and answers; these are very useful.

British Journal of Dental Science,
LONDON, JUNE 14, 1884.

ODONTOLOGICAL SOCIETY OF VICTORIA.

We noticed in our last issue that a Society had been started in Australia, under the title of the Odontological Society of Victoria. We are now in a position to lay its bye-laws before our readers, and to announce its objects and ambitions. It is subject for congratulation that Australia should have initiated this Society, which, as we propose to point out, affords ample scope for the colonists to establish their reputation as not only skilled, but intellectual dentists. At this time, when we may safely say, Englishmen are occupying an extremely high position among European dentists ; when we find Englishmen taking by right the highest seats among the judicial experts in dentistry, and English workmanship sought after, we may well expect English colonists to come to the fore and maintain in Victoria and elsewhere, the *prèstige* of the mother country.

We say that English dentists are justly thought well of, and in so saying we do not fear contradiction. Of course, there are "bye-ways" in dentistry, and much to be deplored, but there is still a very healthy tone inspiring the profession, and one which, if it be not stifled by the petty differences and short-sighted jealousies, over-much patter about diploma-this, and diploma-that, must in the end place English dentists in the very forefront of professional men.

We see with pleasure that the Odontological Society of Victoria has wisely restricted its members to that class of practitioners who discard the wretched trading which still disgraces the ranks of dentists. To be a high class dentist, certainly seems to us to be the best commendation any man can have. In Victoria, although the L.D.S. may be as highly thought of, yet it is prudently not made a bar to exclude many a first rate practical man from a society which needs all the intellectual strength that is obtainable.

It is always, we think, a questionable policy to make any mere diploma restrictions a means of regulating the entrance into a learned Society. It is so, because in the first place many efficient men, pre-eminently so, do not hold the diploma, and then because the holders of the obligatory diploma are apt to attach an overwelming importance to their qualification.

One has only to turn over the pages of the transactions of what may be termed the Mother Society—the Odontological Society of Great Britain, to see what valuable material such societies bring forth. It can hardly be expected that the younger societies can always command the same intellectual gatherings—at least theoretically this is so, though as a matter of fact a large number of the senior members of the Society are perforce absent or silent at a considerable per centage of the meetings.

We commend to the promoters, however, of the new scheme; the excellent plan of bringing forward at each meeting succinct narratives of cases and the exhibition of specimens, a plan which fosters alike the rare gift of observation and unearths many an interesting point, while it not unfrequently strikes the key note to a discussion of the most valuable, because practical description.

We offer our very warm sympathy to the Odontological Society of Victoria, and trust that its success will be commensurate with its desserts.

Tooth Brushes.—What kind to use, and how to use them.—Dr. Abbott, a New York Dentist, writes: "It appears that the majority of people who cleanse their teeth at all brush them with a very large, stiff brush that will cover both the teeth and the gums with one sweep. The cross motion is the only one that can be made with such a brush. This, they think, is all that is necessary. The consequence is, the gums are irritated and recede, the necks of the teeth become cut or grooved, and, sometimes, even the enamel is brushed off; besides, when the brush gets half way back in the mouth its excessive size prevents it from going further, and the back molars are not touched at all. I instruct my patients in the style, size and use of the brush, and what kind of dentrifice to use, and how and when to use it. I think this as much my duty to do so as it is to do my work carefully and properly. I am talking to my patients almost constantly about the importance of keeping their teeth clean, of what can and should be done with toothpicks, silks, &c.; in short, anything I can suggest for the purpose of keeping particles of food from remaining on the teeth and between them. An up and down motion of the brush, lengthwise of teeth, is the proper way of brushing them where it possibly can be done. I advise the use of a dentifrice once a day, in the morning after breakfast, for the reason that the patient becomes habituated to a clean and polished surface to the teeth, and if anything lodges upon them in the middle of the day from eating, it will be detected by the tongue or lips, and they will remove it. I recommend them to brush the teeth at night again with simple water. I use as a dentifrice a powder composed of French precipitated chalk, a little soap, colouring matter and flavouring. There is friction enough in the chalk to cleanse the teeth nicely and all the soap that is necessary."

INCIDENT IN PRACTICE.—Dr. Francis, of New York, communicates the following incident in practice in the *Independent Practitioner*:—Mr. M., a New York merchant about sixty years of age, called some two months ago, complaining that for a long time he had experienced a decidedly unpleasant sensation all about the left side of his face, the gum and roof of his mouth feeling sore, and the soreness extending to the eye, the temple, and the ear. He had a wearied and care-worn look, was much depressed in spirit, and declared that he felt "miserable." He had for a long time been treated for "chronic catarrh," and was still under treatment, with no improvement.—Removing a partial artificial denture, the roots of the left biscupids were discovered in a badly decayed condition. These were extracted, and through the alveolar openings of the second, considerable pus escaped. A probe introduced penetrated the antrum; tepid water forced into the alveolus brought a quantity of vile-looking pus through the nostrils.—This case received daily treatment for two weeks. Tepid water, seasoned with chloride of sodium, was first injected, followed by carbolized water, to which was added a few drops of tinct. calendulæ, and the space kept open with tents of cotton coated with carbolized glycerine.* Indications of necrosis being discernible about the alveolar process, acid sulph. arom, was several times applied.—After the second week, treatment was less frequent, and now the case is all right, requiring no further care.—The patient is as well as ever, is bright and happy as possible, looks at least ten years younger, and declares he feels "twenty." Query. Is dentistry only a mechanical art?

FRACTURE OF TEETH.—A curious case under the care of Mr. Thomas Bryant is reported. The teeth of the upper and lower jaw on the left side were fractured. The lower teeth on the right side were depressed into the alveolus, there was also facial paralysis. It was probable that there was fracture of the base of the skull. The case resulted in recovery.

The details of the case are these:—The patient aged 17, was a porter. He fell from the side of a steamer and struck his chin against the quay.

Upon admission into hospital he was conscious. There was a lacerated wound under the symphysis of the chin. The portion of the alveolar arch carrying the left lower canine tooth was loose—at this time no other fracture was detected. The next day left facial palsy was observed.

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*Carbolized Vaseline is perhaps even better.

The face was swollen, movements of jaw imperfect, breath foul.

On the ensuing day, the mucous membrane on the right side of the jaw was much swollen, and the teeth behind the canine had sunk below their normal level, their cusps being level with the necks of the other teeth. Later on, the teeth were elevated, and although some portion of the alveolus exfoliated the teeth appear to have become firmly fixed, and to have resumed their normal position. Mr. Bryant believes this dislocation into the alveolus is unique.

ALUM AS A GARGLE.—A case is related of a woman who was in the habit of using an Alum gargle to relieve chronic pharyngitic catarrh of the middle ear. After some weeks her teeth begun to crumble away. It would seem that when the enamel is injured and the Alum can get at the dentine, that it dissolves it, and causes the disintegration so marked in this case. As a precaution against such untoward consequences it is advised invariably to rinse out the mouth after the employment of such a remedy, and to use lime water.

THE Eastern Counties' branch of the British Dental Association have issued a programme of their meeting which is to take place at Cambridge on Tuesday and Wednesday, June 17th and 18th. The programme is most artistically prepared, and is really in itself a work of art. When we look into its contents, we see the arrangements for what promises to prove a most successful meeting. Among the papers to be read, we notice as being upon subjects of especial interest, "The Mouth in the Insane," by Mr. W. A. Rhodes; and one on "Porcelain crowns," by Dr. Cunningham. A special discussion is requested upon the various methods of restoring crowns. A goodly supply of "local arrangements" proposes to give to members of the association the full benefit of whatever is going on, and to show them the many places of interest which environ Cambridge, or lie within the city's precincts.

ODONTOLOGICAL SOCIETY OF VICTORIA.—The following are the office bearers:—President: James Cumming, Esq.; vice-president: A. M. Townsend, Esq.; hon. treasurer: J. Iliffe, Esq.; hon. sec.: G. Thomson, Esq., L.D.S.; committee: E. C. Carter, Esq.; F. Kernot, Esq.; J. F. Stabback, Esq.

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the Publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against one another. All makers, vendors, and inventors, ore invited, with strict impartialisy, to contribute towards this end.

TARTAR SCALER.

Mr. Daniel Richard Collins, 32, Newman Street, Oxford Street, W., has made a new instrument for dislodging the tartar from between the lower incisors, which on trial has proved very efficient indeed. It is a delicately made knife-edged instrument designed to pass between the teeth from the front backwards, the end being cut off nearly square—although a little inclined backwards from the broad back to the upper edge—the surface of the end, however, instead of being flat, has a V shaped groove, thus presenting two cutting edges to the tartar, the effect being that with comparatively slight pressure, the tartar is stripped off from the side, and partly round the back of the tooth in one piece, and the instrument has no tendency to slip aside. These instruments are also to be seen at his father's in Poland Street, W.

We are requested to mention that Mr. Daniel Collins, jun. has commenced business for himself in Newman Street, and are pleased to add that this is with the concurrence and approval of his father.

The report of the Dental Hospital tells us fewer operations were performed, but more mechanical work was undertaken during the past year. Cases treated at the Dental Hospital of London, from January 1st, to December 31st, 1883 :—

Extractions	Children under 14	5,440
	Adults	10,356
	Under Nitrous Oxide	4,580
Gold Stoppings		1,819
White Foil ditto		102
Plastic ditto		7,803
Irregularities of the Teeth treated mechanically		1,456
Miscellaneous Cases		2,484
Advice Cases		1,582
Total		35,622

Abstracts of English and Foreign Journals.

ZAHNTECHNISCHE REFORM.

"IODOFORM AS A SPECIFIC IN PULPITIS AND PERIOSTITIS," by G. WÖRNER of Frendenstadt. For some years there has been a revolution in the treatment of pulpitis and periostitis which has made the heroic methods which were formerly in use almost unnecessary, and teeth which would then have been lost, or have been robbed of their chief organ of nourishment, the pulp, can now be retained. One of the first who deviated from the old method was Herr Witzjel, of Esden, with whose phenol preparations favorable results were obtained, but, as with every novelty, the idea when once given forth, it was speedily changed and improved upon. In a short time a number of means were recommended, for example: Wickersheimer's fluid, eucalyptol oil, &c., each pursued the same aim. About two years ago Herr Skogsborg, of Stockholm, brought forward an iodoform preparation, of which the antiseptic quality is excellent. Although several years have elapsed since its introduction, it seems either that a great many dentists have not given it a trial, or that the result of their trials is not satisfactory. Under these circumstances Herr Wörner has given his own experience of the Iodoform paste. He says he has used it in all stages of caries with good effect. Cavities where a sufficient layer of sound *dentine* exists over the pulp so that there is no pain, are immediately excavated, the hollow formed for the reception of the stopping, all moisture taken away by means of alcohol and then stopped. In cavities in which the pulp is still covered with a layer of soft dentine, but where pain is sometimes felt, especially at the time of excavating, he puts in a solution of carbolic acid for an hour or two, and then stops the tooth. If the pulp is laid bare either through the instruments employed, or it may be that it was bare in the first instance, he over-lays it with iodoform paste, and then stops. With already much inflamed pulp the pain disappears after the application of iodoform paste. In cases where the pulp was already seized with inflammation and the root membrane inflamed, he uses arsenic, takes away the pulp, and uses the paste in the root canal, but stops first, after which all inflammation subsides. In cases where an abscess has formed, the first thing to be done is to cleanse the root canal by syringing and wiping out, which can be done with some wrapping wound round a nerve needle, afterwards using an application of permanganate of potash to the root, and finally plugging with iodoform cement: bad consequences rarely occur. The iodoform paste is made as follows:—

ꝶp. Iodoform pulv. 5 parts.
Acid. Salicyl. 3 parts.
Morphiat Muriat. 1 part.
Glycerine.
Ol Menthæ gtt. v.
fiat pasta.
D.S.—For outward application.

The iodoform cement is made by mixing zinc cement with iodoform paste.

AMERICAN JOURNAL OF DENTAL SCIENCE.

Pre-natal Influences Affecting the Teeth, by Geo. H. Cushing, D.D.S., Professor of Operative Dentistry in the Chicago Dental Infirmary.

Healthy children can only spring from healthy parents.

Man, as he is living at present, is leading an unnatural life, and hence his tissues are placed at a disadvantage.

It is pointed out that a large majority of those who bear children are victims of disease past or present at time of gestation. Further, that the infringement by the mother of the laws of health, such as want of exercise, and eating in-nutritious substances, tight lacing, &c., cannot but produce in the progeny, dental caries. It is pointed out that the law of heredity, covers also those cases in which weakly parents produce powerful offspring, and the converse—since the "strain" of many generations works out at certain cyclical epochs in family history.

The modes of treating are similar to those indicated in Dr. Palmer's article on Dental Hygiene.

[This article appeared in the Ohio State Journal of Dental Science].

Is Dental Work Expensive? by D. R. Stubblefield, A.M., M.D., D.D.S.

This question is answered in the negative. It is pointed out that the results of a good dentist's work are really priceless—they mean the difference between health and disease, comfort and misery, early death, and a prolonged active life.

DEUTSCHE MONATTSCHRIFT FÜR ZAHNHEILKUNDE.

"Researches on the Ossification of the Tooth Nerves, its Causes, Appearances, Consequences, and Treatment," by Adolph Petermann.

The very diligent author has rightly republished this work in the form of a book, that those of the public who are interested may know something of the till now sparsely treated subject. The work is divided into seven parts—first the historical part. The first notice of dental new formations was given by Hunter in 1780. Salter in 1855 called forth the clinical interest by showing that the dental new formations on the walls of the dental canal sometimes bring forth neuralgia. Such notices as these prove that Herr Schlenker is familiar with the extract Literature. The second part treats of the new formation of hard tooth substances in the ossified pulp of teeth. He mentions the authors who have found such in the teeth of men and animals. Schlenker has met with these new formations in all human groups of teeth as free and adherent. The free new formations, the author has found in all possible forms and figures, and all had a light transparent appearance. They consist chiefly of phosphorescent chalk. The third part is devoted to Causes, as the caries must be looked upon as the most abundant cause; it happens too, that toothache in a carious tooth will effect with new formations a healthy tooth. Other Causes are use, electrical streams of metal fillings, inflammation of the periosteum and senicle decay. The fourth part, Symptomatology, is passed over with few words. Part 5, the Consequences of the new formation are violent neuralgia and true prosopalgia. He enumerates cases where neuralgia or prosopalgia which have lasted for years are destroyed by simply annihilating the pulp, or extracting one or two teeth. The sixth part upon Therapeutic, in which the author says that before any treatment the mouth should be submitted to the careful inspection of a dentist; with healthy teeth the destruction of the pulp is the only means of preventing the other teeth from being sacrificed.

The seventh part, Anatomical condition of the new formations, offers particular interest for the histologer.

For the formation of toothache fibre, many cells must be united. If the petrification takes place early, the substance receives enamel like joints and a like appearance. The ossification of the dentenoid does not proceed from the cells, but from the pulp; for dentenoid has been found in which is no trace of cells or substance. The illustrations increase the value of the work, for they are photographed by the author himself.

ITEMS OF INTEREST.

"THE MANIPULATION OF OXY-PHOSPHATE."

In using the phosphate of zinc, some dentists jeopardize their work by working too much. If it is good phosphate, the quicker it can be brought to a stiff dough and packed in the tooth-cavity, the better. If you commence the mixing by useing only enough powder to make a thin cream, you can then add powder rapidly till the whole is a stiff mass. You must not make it necessary to add more powder from the bottle to make the mass stiff, but have plenty on the slab. It should be immediately carried to the tooth and packed, *while its heat still shows the process of chemical union active.* If it is much worked after this, even to polish it, it is injured. And it should be left as nearly as possible in the contour desired; for any cutting, or filing, or scraping, after it has set, will make a true polish impossible, and cause the surface to imbibe moisture, thus favouring disintegration. Its own undisturbed crystallization produces a peculiar gloss that is an almost impervious polish.

The spatula in mixing phosphate is often too small and slender. The large blade of a jack-knife is good. The best tablet to mix on is a thick glass about 3x4 inches. The best instrument for packing is a smooth, thin, blade. A good covering to protect the filling while hardening is gutta-percha varnish: the same as put over the nerve if exposed; and which makes a fine lining for sensitive teeth, and a covering for sensitive surfaces after medicaments have been applied.

THE JOURNAL OF BRITISH DENTAL ASSOCIATION.

"Dental Caries." A Critical Summary, by Henry Sewill, M.R.C.S., L.D.S.

Caries is a process of disintegration, commencing invariably at the surface, proceeding inwards, and due entirely to external agents; enamel and dentine are perfectly passive under this process of disintegration and exhibit neither pathological or vital action of any kind.

There are no morbid changes in the tissues induced by the vascular or nervous system.

The truth of these statements Mr. Sewill believes is to be found in the consideration of the true nature of enamel and dentine, which he goes on to describe. Enamel has no vascular or nerve connexions. Bôdecker is quoted to the effect that he has found organic matter regularly distributed through the enamel. Dentine is in relation with the pulp which it encloses, but the membrana eboris cuts it off from all immediate contact with the vessels. These considerations it is urged should alone prove that enamel and dentine are incapable of active pathological action.

Assuming the truth of the assertion that external agents are the only active movers in the matter, it is asked what external agents exist in the mouth capable of affecting the teeth. There is always acid in the mouth—this acid is capable of eroding the teeth.

The researches of Messrs. Tomes are quoted to the effect that dental caries usually results from the solvent action of acids assisted by structural imperfections such as fissures, cracks or flaws in the enamel. Microscopic examination bears out these views; for example, in the enamel the central portion of the fibres is the first to undergo decomposition; in the dentine the connecting substance goes first; the walls of the tubes last.

Professor Wedl's conclusions, we are told, agree with those given above. "Caries has its origin, in the abnormal secretion of the gums, of the buoccal mucous membrane and salivary glands; the secretion of the gums probably being very active from its immediate contact with the teeth. The decomposition due to the solvent action of acids found in the mouth, commences at the exterior of the tooth, and travels in towards the pulp cavity. The teeth are decalcified by these acids. The tissues are passive, no inflammatory action occurring. The decay of the teeth is largely aided by accumulations of food and secretions in the mouth, and the presence of the fungus leptothrix buccalis.

In the early stage of caries, Wedl recognises the presence of pigment in the enamel (held by Sewill to be deposited by bacteria). The persistence of the contour of the prisms in places—that is the more rapid solution of their centres than of their peripheries, by the acid—Wedl thinks may possibly be due to proliferation of a mass of leptothrix into the decalcified enamel; and Wedl also regards the disease as attacking the dentine in two stages, one of decalcification and softening, and a stage of direct disintegration. In this last stage the tubes become enlarged and varicos, and filled with leptothrix, which he avers may pervade the whole carious cavity. Wedl has also found these identical changes affecting artificial teeth, and even those made out of hippopotamus horn.

Leber and Rottenstein assert that the initial decay originates from the solvent action of the deibs in the mouth. Into the minute chinks so formed, the leptothrix enters, and the resisting power of the tooth is lost or lessened, so that it falls an easy prey to the fungus.

Magitot, on the other hand, regards caries as due to pure chemical action.

M. Salter's authority is also taken to support. those views.

"A Baptist Dentist," is the title, in bold-faced type, of an advertisement in the *Canadian Baptist.* We are told that Dundas, with a population of four thousand, is without a dentist, that "a good brother would be very useful and very soon prosperous." We did not know before that membership in the Baptist denomination was in itself a preparation for the practice of dentistry. If the people of Dundas have discovered that Baptist dentists have an inspiration and skill that is not possessed by those of other denominations, they are right in publishing the fact to the world. But we fear that we discern in this advertisement an attempt to revive, under the disguise of dentistry, the horrors of the inquisition for the purpose of religious propagandism.

Literary Notices and Selections.

TRISMUS NASCENTIUM; OR, THE LOCKJAW OF INFANTS.

Its History, Cause, Prevention, and Cure.

Illustrated by Cases and Post-mortem Examinations, with Statistical Table of Two Hundred and Twenty-nine Deaths.

By J. F. Hartigan, M.D., of Washington, D.C.

(*Continued from p.* 544.)

Our author then passes on to a class of cases in which it is not so easy to detect the occipital displacement, and in which there will be less of the "dorsal decubitus;" but in which the true relative position of the bones may be readily detected, when the way of doing so is understood.

"One of two things must *invariably* exist; either the occiput will be under the parietal, or *vice versa,* according to the position in which the child has generally been retained. If it is not ascertained almost by the sight alone, I press the forefinger firmly against the occiput, about half an inch from the lambdoidal suture, and at a point about half way between the posterior fontanelle and the mastoid process. I now pass the finger slowly and cautiously across the suture; at every step making firm pressure. When the finger arrives at the suture, or commissure, if the occiput is under the parietal bone, it will be found to yield, and the finger, coming in contact with the edge of the parietal, will have to be elevated a little so as to pass over on its free border; but if the occiput is on the outside of the parietal, then the finger meets with no obstruction; on the contrary, it glides smoothly over, and falls on to the parietal. The proof will be found in a retrograde manœuvre."

These teachings are fully in accord with my own experience. The arguments adduced by Dr. Sims all go to show that the disease is the result of pressure exerted at the base of the brain by *inward* displacement of the occiput, differing in degree from the slightest to the greatest. There is yet another class of cases which he describes, plainly caused by an opposite state of things, viz., by prolonged *lateral* decubitus, the occiput being *exterior* to the parietal bones, and in his paper he fully explains the mechanism of its production and the rationale of the symptoms observed.

I now consider those cases which came under my own observation, and which for convenience I have divided into three classes: 1st. Those that recovered under postural treatment. 2nd. Cases in which post-mortem examinations were made, many of which were seen before death, but too late to render any service. 3rd. Those whose history was obtained after death, the majority also having been seen before fatal results ensued, but where post mortems were not permitted.

The first class embraces six cases, mostly of trismoid. This is to be expected for the reason that the acute form, which runs a more rapid course, is seldom seen by the physician, or when he is called the patient is generally in the hopeless stage of extravasation; or, on account of severity of the paroxysms, death has taken place from asphyxia. Hence I have included in the statistical table of 229 deaths which follows, all under a month old only. I made altogether about 150 post-mortems, but to save repetition, I have selected at random the 25 recorded in Class II., and the 18 in Class III., as a fair average of the general results.

The peculiar degree of pressure, as shown in Dr. Sim's illustration, accounts for what he appropriately denominates trismoid, or the chronic form of the disease.

[A large number of cases of interest are here related in extenso, but for our purpose the conclusion drawn from their study will suffice. Ed.]

This demonstrates only a trifling difference in the percentage of males (55 to 527) compared with the trismus table, and ought to dispose of the latest theory that adherent prepuce is largely the cause of the disease. The increase of whites in this Table is due no doubt to the equal likelihood of accidents and violence, as it includes chiefly the poor, or those in the same station that the coloured represents.

Now, with regard to the identity claimed between this disease and tetanus in the adult, it will be apparent that the statistics presented do not confirm this view. It is also disproved by the comparisons of Dr. Sutton and others, previously given. Holmes mentions 277 cases of traumatic tetanus, of which only 130, or 47 per cent., were seized within ten days after the injury. I was enabled to learn the time of seizure from birth in 109 of my cases of trismus, of which number 189, or 90 per cent., were under 10 days; while of the 88 reported by Stadfeldt, only one survived the 10th day. Matuszynski's 25 were all seen before the 9th day; and 107 of the 114 of Clarke's died before the 9th day.

In a table of 327 fatal cases of tetanus in the adult, also reported by Holmes, 70 succumbed within two days, or 24 per cent. I ascertained the average duration of sickness in 207 of my cases to be 50 hours, of which number 165 lived two days and under, or about 80 per cent., and 86 lived one day and under, 41.6 per cent.

Another point in refutation of this claim of identity is the fact that in the tetanus of the adut febrile excitement is not essential, and if present is only secondary. Indeed, O'Beirne states that of 200 cases observed by him, not one was accompanied by fever. In every instance of trismus nascentium where I took the temperature, when the disease was at its height, I found an elevation; one case that I saw with Dr. Shadd of the Freedman's Hospital reaching 104·4 deg.

Neither are the post-mortem appearances alike. The brain, medulla, and cord have been found in various conditions in the adult, but very rarely if ever have coagula been seen, although universally present in the infant. The similarity of these diseases in other respects I admit, but their etiological relation I deny. The principal basis of identity claimed is the trauma necessarily inflicted in the cutting of the cord at birth, irritating dressings, etc., to navel, which is supposed to correspond with the wound in the adult.

An analogy to eclampsia has also been claimed by some writers. In this connection the following remarks of Dr. J. Lewis Smith accord with my own observation. After describing mode of attack and paroxysms of eclampsia—which differ widely from trismus—he says:—

"Death does not ordinarily occur from one attack. There are several at intervals, during which the stupor is gradually becoming more and more profound, till finally there is total loss of consciousness and sensation. This is the most frequent mode of death, namely from coma. . . . The only disease for which there is danger of mistaking eclampsia is epilepsy. (We all know what a far remove this is from trismus.) M. Ozanam mentions the following means of distnguishing the two; 'Eclampsia differs from epilepsy in the frequent occurence of prodronic symptoms, the chronic form of the convulsions, the rare appearance of froth in the mouth, the absence of a hideous aspect of the countenance, the spasmodic and sobbing character of the respiration, and a state of quiet without which succeeds an attack. Eclampsia consists in a rapid, forcible, and involuntary muscular contraction *alternating with relaxation.*' In trismus there is generally tonic rigidity throughout."

Another difference: "Eclampsia occurs at any period of infancy and childhood, and is either adiopathic, symptomatic, or sympathetic. The most common case, however, of chronic convulsions is the presence of some irritant in the primæ viæ. Detention, worms, etc., are also causes."

Dr. Thore says: With regard to the umbilicus, the condition described by authors may be produced or developed during the disease. In my experience there is nothing more common than inflammation of umbilicus, and nothing more rare than trismus."

Dr. E. Goldmann, of Texas, says that he has seen many cases in which no lesion of any kind could be traced to the navel. On the other hand, he had seen a number of children with navels ulcerating for weeks with considerable tumefaction and redness around, and yet without tetanus intervening. According to Gaillard, the soreness of the umbilicus cannot be regarded as the peculiar pathognomonic lesion, since it is so frequently observed without the supervention of trismus. Dr. Hancock, of Edinburgh, is opposed to cutting the cord, on the ground that it produces the disease; while some observers in the Southern States found the practice of not cutting the cord was limited to a stray midwife, and was invariably attended by fatal results.

Another point which the advocates of the umbilical theory seem to have overlooked, is the fact that no nerves have been traced to the cord. Who has ever observed the slightest evidence of pain or uneasiness in tying it? How then can the "reflex irritation" of Baldwin be explained? Dr. Woodworth, of Miss., while not advancing any theory as to the cause of the disease, thought that "physicians who attribute it to tying or dividing the funis improperly, must forget that the funis is not supplied with nerves."

Dr. Sutton, replying to the position taken by Dr. Watson, says, "but I do not suppose Dr. W. means that the wound inflicted on the cord, *per se*, ever gives rise to trismus. We know of no nutrient vessels in it, no nerves to direct vital operation." Among my own endeavours to ascertain something satisfactory on this point, I addressed a letter to Dr. Francis Delafield, of New York. His reply was, "I have no knowledge concerning the nerves of the umbilical cord."

If anything more is necessary to refute this umbilical theory, I invite attention to the following extract from a lecture by Edmund Owen, F.R.C.S. (*Brit. Med. Journ.*, i. 1880):—

"I will now allude to a strange condition of the umbilicus, of which I have seen a good many examples. Close around the cicatrix is a red and irritated or eczematous patch of skin, whilst from the depths of the umbilical fossa oozes a thin purulent fluid. For the cure of this affection lotions and all other kinds of dressings avail nothing; for, at the bottom of the depression, and hidden by overhanging folds of skin, there is a small fleshy polypus which has sprung up from the scar of the fallen umbilical cord."

This description would seem to accord with that given with so much minuteness by Colles and Von Busch, and claimed by them to have been the cause of trismus nascentium.

The next prominent theory in the etiology of the disease is cold or draughts of air. It is well known that the gentlest zephyr will very often seem to renew the paroxysms. I do not believe that it can produce the disease *per se.* On the contrary, a more natural result would be bronchitis, and like inflammatory conditions in such an active capillary system as the infant's.*

It seems unnecessary to dwell on the numerous other causes ascribed as producing this disease. It has been shown that climate or season exerts no special influence. Dr. Goldman attributed a case to neglect in shutting the windows before a storm, and claimed that the disease prevails on islands in proximity to the sea more than elsewhere; yet, according to West, we have an example of almost entire immunity in Ireland. Another writer (Gaillard) starts out with the assertion that it is well known to be more common in warm than in cold climates, and before his article is finished the statement appears, "the disease is most frequent in the cold, damp, and variable months of winter and spring," while Watson ascribes the predisposing causes to indigestion, heat, etc., and that "it attacks so frequently on the ninth day after the cutting of the funis that it has been termed nine-day fits."

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* Cold, as a cause of simple congestion of the spine, is, however, generally interesting. I do not deny its possibility to produce many of the symptoms of this disease. But as age advances, with the corresponding development of the nervous system, it must manifest its influence in a more varied form. A peculiar case of hysteria in a young girl, accompanied with paralysis of cervical muscles, reported by Dr. D. W. Prentiss before the Medical Society of the District of Columbia last spring, was clearly attributable to a long ride in an open buggy, the nervous symptoms following, or being associated with an acute synovitis. This suggested to me that hysteria is often an effect of local or circumscribed congestion of spine, and that in cases arising from this cause, our treatment is often radically wrong. Generally, local congestions, in persons otherwise healthy, are a sequel of cold. We have inflammation of one lung, lobular pneumonia, or any acute inflammatory condition from this cause, always preceded by a stage of congestion. And why should not congestion, local or circumscribed, take place in the spinal cord as well as in any other organ or part of organ, as an impression or shock of cold, and remain passive say from absense of the peculiar tissue or vascularity that favours or develops inflammation? It seems to me this is the philosophy of hysteria following such a history, and when we have an aggravation of the mental and physical symptoms, could it not be accounted for by extension, or the impression being conveyed upwards to the medulla, pons, and brain? Such congestion, when long-continued, would produce exhaustion of nerve power by pressure around the crura, or origin of the optic nerve, accounting also for the temporary blindness sometimes seen in connection with these cases.

Assuming therefore, that hysteria is an effect of minute or larger local congestions of spinal cord following the impression of cold, I repeat, is not the treatment of this condition often radically wrong? It would at least be curious to employ assafœtida, bromides, etc., instead of antiphlogistic measures for congestion or Inflammation elsewhere.

This brings me to the final consideration of the purport of this paper, viz., the establishment of the true cause, and the prevention and cure of trismus nascentium. After the publication of Dr. Sim's articles, cases were reported for and against occipital displacement. Those with whom the practice was successful naturally espoused the theory; while the majority seemed to have derived no benefit from such treatment. This was probably due to a want of true understanding and continued investigation of the subject. Dr. Sims said himself he had not explained everything in connection with it; that his observations were but a small beginning. It is our privilege to give the results of four or five years' perseverance in the endeavour to elucidate this subject. The physiological explanation showing the effects of pressure on the base of the brain, so admirably described by Dr. Sims, which experiment I have myself repeatedly performed with entire satisfaction, leaves nothing more to be said on that point, except to add, that the duration and frequency of convulsions depend upon the degree of pressure. For instance, I have observed in the acute form, that when the convulsions continue a certain length of time, extravasation ensues and the case becomes hopeless. In cases of deficient ossification, where the bones are loosely attached by their commissures, or where the displacement is easily detected, the symptoms occur sooner, and are more aggravated, the majority dying in a few hours.*

Where one side is overlapped, the disease is milder: and when the displacement is hardly perceptible, the symptoms are apt to continue many days. These facts will be apparent from an analysis of the cases of Class II. and III.

(To be continued.)

There seems a dearth of volunteers for Papers to be read at the General Meeting of the British Dental Association; at present only two have promised papers,—this is worse than in the days of Laas Porsena! there were three to keep the breach then? We hope plethora may succeed dearth!

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* This is the class that would accord with Dr. J. Lewis Smith's expectations that "Dr. Sim's theory was correct, compression of the medulla would certainly be followed by immediate and marked symptoms." They are also cases in which there is little or no emaciation, and no consequent sinking of the bones to correspond with supposed cerebral waste.

SYPHILITIC TEETH.

(*From the French of Alfred Fournier.*)

By J. William White, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

Continued from page 518.

A slight glance at the pathological anatomy will serve to complete the argument. If we make a vertical section of a tooth affected with erosion, we perceive at first, with the unaided eye or with the help of a magnifying glass, that the profile of the tooth offers one or many sinuosities, with roughened bases, irregular and blackish. These sinuosities are nothing more than the results of erosion, encroaching upon and excavating the dental substance to various depths. At times the lesion affects the enamel alone, of which a layer, thinned and changed, is found at the bottom of the cavity; at others it penetrates to the dentine. On microscopic examination the enamel appears chipped off even with the edge of the lesion. Its tubes are broken at unequal heights, and their extremities form an irregular, roughened surface. They seem to have lost their reciprocal cohesion, and to be but imperfectly joined one to the other. Above and below the erosion the enamel assumes its normal condition. Up to this point there is nothing extraordinary, and nothing unexpected. But the condition of the dentine has a surprise in store for us. At the level of the erosion, and only at this level, the dentine is affected, the alteration following the track of a horizontal zone corresponding to the plane of the erosion. If there is but one erosion, we find but one band of dentine changed in this way; but if there are several, as in the "step-like" teeth, we find an equal number of diseased zones of dentine, separated by zones of healthy dentine,—a topography certainly of the most curious and instructive kind, from a pathological stand-point, as we shall see later. Through the entire thickness of the zones corresponding to the erosions, the substance of the dentine is altered in a special manner. It would be going away from my subject to describe to you the anatomical details of this lesion. It will suffice for me to say that we there observe a form of degeneration of dental tissue characterised by an anomalous texture of the dentine, termed in special pathology globular transformation of the dentine. This lesion is well known to odontologists, and is considered by them to depend upon a vicious nutritive formation of the teeth.* It is not a simple erosion of the surface; anatomically, it is at the same time a superfical and a deep lesion—a lesion of the whole tooth.

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* *Vide* Magitot,—op.cit.

From the preceding data we can form an idea of what dental erosion is, of its pathogeny, and of the mechanism of its production. A few general propositions in recapitulation will embody our conclusions on this subject. First, dental erosion is a lesion contemporary with the formation of the tooth. This is very plain, since the eroded tooth leaves its alveolus in an eroded state, and since we find it eroded in its alveolus when we take the trouble to look for it there. The erosion is the stigma of a lesion finished during the alveolar life of the teeth. Second, dental erosion is the consequence of an interruption occurring during the process of dentification at the time of the forming of the tooth. In a tooth thus affected, a portion of its substance is lacking, and this portion is lacking, not because it has been destroyed, but because it has not been formed. It is apparent that this interruption of formation was temporary, since above and below this unformed portion of the crown we find the tooth normal and regular. It is thus demonstrated that this stage of nonformation had but a short period of duration. A tooth is, let us suppose, in course of formation, and its summit is already covered with a solidified zone, which in technical language is called the dentinal cap. If things followed their habitual and normal course, this process would continue in the direction of the neck, and would end by forming a regular tooth. But a morbid element makes its appearance which disturbes the nutrition of the organ. Under this influence an insufficient quantity of nutritive materials is appropriated; the cells which should, by becoming incrusted with calcareous deposits, prolong the dentinal cap, undergo a sort of atrophy; calcification is suspended, or is accomplished in an improper or defective manner, and, as a consequence, a dental zone is imperfectly and incompletely formed *flatwise* on the crown. The erosion formed, the morbid element ceases to act, dental nutrition begins again, and the tooth again takes on normal growth. There always remains, however, between the two normal segments, the intermediary atrophied zone, in the state of an indelible, irreparable lesion.

Such is the process of erosion, and we may add to this pathogeny the few following corollaries: It is natural that the importance of dental erosions in regard to extent and depth should be in keeping with the intensity, the character, and the duration of the intervention of the morbid cause from which they proceed. If this cause is powerful, active, intense—if it is of long duration—the result will be an extensive erosion. If the cause is slight and of short duration, the erosion which results will be but superficial, and proportionately less. If the cause makes itself apparent at different periods, with intermissions when its action is suspended, several successive erosions will be produced on the crown in such a way as to produce what is called the "many-furrowed" tooth, the "step-like" tooth, etc. All this is at the same time simple and logical. These inductions begin to step beyond the pale of hypothesis. They soon will be recognised, I am convinced, as indisputable facts.

Dental erosion is the result of a morbid influence of a general character. If the cause determining the erosion were purely local, its action would be confined within corresponding limits,—an altered tooth, or a group of neighbouring teeth affected in an identical or analogous manner. Suppose for example, a case of periostitis—a local cause—developing, let us say, in the left half of the lower jaw. Such a lesion could certainly affect the teeth comprised in this left half of the lower jaw and cause a stoppage of formation, dystrophia of one form or another; but it would limit its action to that point. It could exert no influence whatever on the teeth of the other half of the lower jaw, or upon those of the upper jaw. A local cause is competent to produce only local results. A local cause is absolutely insufficient to account for the conditions noted in dental erosion, viz.: First, multiple and wide-spread changes of the dental system, affecting both jaws; second, symmetrical changes affecting homologous teeth; third, systematic changes, affecting at the same level teeth of the same class and at different heights dissimilar teeth. It is evidently only a general cause which can act as the origin of such lesions. I do not pretend that there are not dental changes derived from other than general causes. There are many which result from causes entirely local, notably bony affections. But these differ absolutely from those which have just occupied our attention, especially in their exclusively local topography.

Dental erosion, therefore, as it shows itself ordinarily,—that is to say, as a collection of multiple lesions, widely spread, symmetrical, systematized, etc.,—cannot be considered as an affection of one or several teeth; it represents an affection of the organic system. It would be inexplicable by the action of an entirely local cause. It is of necessity the product of an influence of a general kind, the character of which we have especial interest in knowing, and which it remains for us to seek out.

There are questions in pathology which constitute true apples of discord, giving rise to opinions most contradictory, and becoming involved in interminable controversies. The one of which we are about to speak is of this number. Let us proceed at once to the facts.

There are three principal opinions as to the etiology of dental erosion. According to some, dental erosion has no relation with syphilis, but is connected with a special affection of infancy, eclampsia. According to others, it is always and exclusively the result of hereditary syphilitic influence. Finally, according to others still, it is simply an ordinary lesion, but originating from syphilis with a marked frequency, and even appearing to originate from it alone in one of its forms,—the Hutchinson tooth. Let us endeavour to unravel the clinical truth from the midst of this conflict of theories.

The first of these opinions has been upheld by a distinguished physician, an eminent specialist of the dental art, M. Magitot, in his "Treatise on the Anomalies of the Dental System,"[1] and developed since then in different publications or in the learned societies.[2] Furthermore, some of his students, Messrs. Castanié,[3] Rattier[4], and Quinet[5] have adopted and spread the doctrine of their master, sometimes even exaggerating it. M. Magitot has built up and defended his theory in a most scientific manner. In the first place, he has furnished for the support of his conclusions a large collection of facts. In one of his memoirs, for example, he quotes no less than forty observations relative to patients who, affected with dental erosion, "had all presented in their infancy symptoms of eclampsia, without any other malady to which could be attributed the lesion of the dental system." He has also produced in favour of his doctrine divers arguments, some of which have a very high value. Thus, to quote but one, "one could in a number of cases establish a connection strictly exact between the age when the eclampsia occurred and the level of the crown where the erosion took place." He believes this connection to be constant. "To-day," he adds, "we do not confine ourselves, in presence of this dental lesion, to an assertion of the previous occurrence of eclampsia; we go further, and, from the level of the notch or the furrow, we name the date of the convulsions," etc. In other words, given a dental erosion, it would be possible from its level on the crown, to establish that a convulsive attack took place at such or such an age,—that is to say, corresponding to such or such a degree of developement of the tooth. The eclampsia itself, in some manner, marks upon the dental crown the date of its appearance. It thus seems incontestable that infantile eclampsia can be the cause of dental erosion. I accept this conclusion, because it appears to be impossible to refute or disregard it. But, this granted, is eclampsia the sole cause of dental erosion? "Yes," reply M. Magitot and his partisans. "No," we reply with no less confidence.

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[1] Treatise on the Anomalies of the Dental System of Man and the Mammals. Paris, 1877.

[2] Clinical Studies on Erosion of the Teeth considered as a Retrospective Sign of Infantile Convulsions. Paris, 1881.

[3] Of the Erosions or Alterations of the Permanent Teeth following the Diseases of Children. Paris, 1874, Thesis No. 384.

[4] Contribution to the Study of Dental Erosion. Paris, 1879, Thesis No 569.

[5] Apropos of Syphilitic Teeth. 1879.

In establishing eclampsia among the etiological antecedents of erosion, M. Magitot has perceived and established an accurate fact, of which we have accepted the authenticity. But, governed doubtless by the idea he followed out, he saw but this fact alone; he has disregarded or wrongly interpreted the cases which did not support his theory or which might have opposed it. He has generalized a particular fact, in giving as an explanation of *all* dental erosions that which is applicable to but a certain number. If we study without pre-conceived ideas on the subject the antecedents of patients affected with dental erosion, we find a considerable number of cases where the theory of eclampsia fails us entirely. If necessary to cite particular examples the only embarassment would be in making a choice. A single case only I shall borrow from my notes—one which gives place to no error, to no possible suspicion of non-observance or failure of memory in reference to the eclampsia. A young child, on whose account I have been many times consulted, presents absolutely typical dental erosions. This child, an adored son, has always received the most extreme attention to the slightest details of his health. He has been treated from his birth to the present day by my colleague and friend Dr. R. Blache. There has not been one of his most trivial indispositions, for which M. Blache or myself, or sometimes both of us at once have not been summoned to him. Well, this child, notwithstanding his dental erosions, never had the shadow of a convulsion or anything that could in any way resemble one. This M. Blache recently stated to me; and the father and mother, who have not lost sight of their child for a single day since its birth, confirm this assertion. A single fact like this would serve to explode the exclusive theory which ascribes to eclampsia all the cases of dental erosion. But facts of this kind abound. Therefore, while admitting that eclampsia can act as the origin of dental erosion in a certain number of cases, we claim that it is not the sole cause which may produce it.

I have only to reverse the order of the statement with reference to the theory, none the less exclusive, which attributes to syphilis all that which the preceding one ascribed to eclampsia.

This doctrine originated in England through the labours of Hutchinson. Among ourselves, it has its chief representative in my eminent colleague Prof. Parrot, who has dedicated to it several of his fine lectures upon hereditary syphilis[1]. It can be summed up in this manner: hereditary syphilis is the essential, the unique cause of dental erosion. Here still is partly truth and partly error. It is assuredly an incontestable fact that syphilitic heredity is the true origin of dental erosion in numerous cases. It is absolutely certain that, in a number of patients, the erosion cannot be attributed to any other cause. But it does not follow that dental erosion proceeds invariably from syphilitic heredity. In fact it is not uncommon to meet with dental erosions upon non-syphilitic subjects, born of non-syphilitic parents. I recall a fact which, were it the only one, would settle my conviction on this point. One of my most intimate friends, a companion from childhood, whose whole life I know as he knows mine, has a child who presents four teeth affected by erosion. Neither his child, nor his sister, nor his father, nor his mother has ever had the slightest symptom. And how many other analogous observations could I not produce!

There is also testimony drawn from an entirely different class of facts. It is generally accepted that syphilis does not affect the ox or the dog, but dental furrows have been observed on the teeth of these and other animals.* In a four-year-old Durham ox, M. Magitot saw the two central teeth affected with erosions, transverse and deep, occupying the upper third of the crown. In the historical examination a zone of globular dentine was found corresponding to the level of the erosion,—a lesion like in every point to the dental erosion of man. Likewise, M. Capitan recently showed to the Society of Anthropology the jaw of a dog affected with multiple dental erosions. From all this, then, a final conclusion is reached, viz., that syphilis is not the sole origin of dental erosion.

To be continued.

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[1] See especially "*Le Progrès Médical*," 1881, p. 359.

* According to M. Rattier (Thesis quoted p. 86) M. Duval "has made a collection of eroded teeth, among which are found the teeth of the horse the elephant, and the hippopotamus."

Dental News.

MEMORANDUM & ARTICLES OF ASSOCIATION AND BYE-LAWS OF THE ODONTOLOGICAL SOCIETY OF VICTORIA.

1.—The name of the Society is the Odontological Society of Victoria.

2.—The office of the Society is to be in Melbourne.

3.—The objects for which the Society is established, are the promotion of Dental Science and the maintenance of the honour and interests of the Dental Profession, by the aid of the following:

(*a*) Periodical meetings of the members of the Society.

(*b*) The reading of papers on Dental and other subjects, and discussion thereon.

(*c*) The occasional publication of Transactions or other papers.

(*d*) And such other lawful things as are incidental or conducive to the attainment of the above objects.

Bye-Laws.

1.—Any Dentist shall be eligible for election, provided that he be of good character; that he does not conduct his practice by means of the exhibition of dental specimens, appliances, or apparatus, in an open shop, or in a window, or in a show-case exposed to public inspection; or by means of public advertisements, or circulars describing modes of practice, or patented or secret processes; or by the publication of his scale of professional charges.

2.—Persons desirous of becoming Members of the Society must be proposed and seconded by Members, and will be balloted for at the next quarterly meeting. The Secretary to receive nomination paper, countersigned by proposer and seconder, one month before such meeting. The names of candidates, the proposers and seconders, to be sent to Members, together with notice of meeting. The voting shall be by ballot, and a majority of not less than three-fourths of the meeting shall be necessary for the election of the candidate.

3.—Any Member may be removed from the Society by a majority of three-fourths of any meeting.

4.—An extraordinary meeting may be convened by the President at any time, on requisition of five members,—subject to be named.

5.—Every member shall pay a subscription of £1 1s. per annum. The subscription shall be considered due in advance on March 1st in each year, commencing on March 1st, 1884.

6.—Any member failing to pay his subscription on or before 1st of June in current year, shall without prejudice to his liability to the Society, be suspended from all privileges of membership, until he shall have paid the same, and if the subscription in arrear be not paid before October 1st following, he shall cease to be a member.

7.—Any Member wishing to withdraw from the Society shall give notice to the Secretary in writing, and pay all arrears due before 28th February following.

8.—Any member of the Dental or Medical profession may be admitted as a visitor to any of the meetings of the Society on invitation of the President.

9.—An annual general meeting shall be held on the first Thursday in March in each year, for election of officers and transaction of general business.

10.—The ordinary meetings shall take place quarterly on Thursday evenings.

11.—No business shall be transacted unless a quorum of members be present at the commencement of such business, and such quorum shall not be less than seven.

Election of Officers.

12.—(*a*) The officers shall consist of a President, Vice-President, Treasurer, Committee (numbering three), and Secretary.

(*b*) The above-named officers to form Committee, and three shall form a quorum.

(*c*) The officers shall retire annually, and shall be eligible for re-election.

(*d*) The Treasurer shall receive subscriptions and other monies payable, and shall discharge all debts ordered by the Committee to be paid.

(*e*) The duties of the Hon. Secretary shall include being present at the meetings of the Society and of all committees; the recording their respective minutes, the conducting the correspondence, superintending the collecting of subscriptions, and acting generally under the direction of the Committee.

No bye-law shall be made, altered, or repealed, except at an annual general meeting, unless a written notice, specifying the nature of the proposed amendment, shall have been given to the Committee at least three months prior.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MONTHLY MEETING. APRIL 7TH, 1884.

J. SMITH TURNER, M.R.C.S. AND L.D.S. ENG., PRESIDENT, IN THE CHAIR.

The Minutes of the previous meeting having been read and confirmed,

Mr. W. H. Williamson signed the Obligation Book, and was formally admitted a member by the President.

The President announced that the following candidates had been duly nominated, and would be balloted for at a subsequent meeting, viz.:—

Messrs. Arthur Baines, L.D.S.I., Lichfield House, Hanley, Staffordshire; and
Richard Theodore Stack, M.D. Dublin, F.R.C.S.I.,
D. M. D. Harvard, 10, Westland Row, Dublin, Professor of Dental Surgery, Royal College of Surgeons of Ireland, Surgeon to the Dental Hospital of Ireland, &c.

Mr. T. Bird, M.A. Oxon, M.R.C.S. Eng., 38, Brook Street, Grosvenor Square, was balloted for and elected an honorary member.

Mr. Weiss announced that a copy of a small work, entitled "Vulcanite and Celluloid," by S. E. Gilbert, D.D.S. published by the S.S. White Company, of Philadelphia, had been sent as a donation to the library.

Mr. S. J. Hutchinson announced that several valuable specimens had lately been added to the museum by the liberality of Mr. George Parkinson. One was an unusually fine and perfect tusk of the narwhal; the museum had previously contained only a much mutilated specimen. The other additions being an upper jaw and skull of a walrus, a lower jaw of a bear, and one-half of the lower jaw of a hippopotamus.

He had also received from Mr. Henry Sewill a very large wisdom tooth and two unusually small ones, all three extracted from the mouths of female patients.

The President said there were several casual communications entered on the agenda paper, but as there was an important paper to be read that evening, and he was anxious that plenty of time should be allowed for its discussion, he had arranged with most of the gentlemen to postpone their communications to another meeting. There was, however, one gentleman present who did not very often honour the society, and who might not be able to attend again; he would therefore call upon Dr. Bellisario, of Sydney, to read his communication.

Dr. Bellisario said he was much obliged to the president for the opportunity afforded him of bringing before the society the particulars of a very interesting case which had been under his care in Sydney some months since. It was a case of partial dislocation of the two central and left lateral incisors, with transverse fracture of the right lateral, which was broken across, as nearly as he could judge, about the middle, and the chief point of interest in the case was that this broken lateral united perfectly.

Mr. C., aged twenty-seven, was driving home in a dog-cart late at night, at a rapid pace, when his horse stumbled and fell. He was thrown violently out and struck his face against the stump of a tree, cutting his hand in the endeavour to save himself. He was much bruised and shaken, got home with much difficulty, and sent for his medical attendant, who advised him to see Dr. Bellisario the first thing in the morning. Dr. Bellisario was, however, unable to visit him before midday (May 3rd, 1883). He found the patient in great pain, his lips and face much swollen, and gums very congested. On making an examination, which he would only submit to after a good deal of difficulty, on account of the pain caused by the slightest touch, Dr. Bellisario found the two centrals and left lateral out of position, very loose, and matter issuing from the sockets The right lateral was fractured transversely; crepitus could be most distinctly felt, and the slightest touch produced the most intense pain, probably from the fractured part when moved impinging on the pulp.

Dr. Bellisario thought it would be worth while to try whether union might not take place, though well aware that such a result is extremely rare. The treatment which he adopted was very simple. He brought the partially dislocated incisors into their proper position, made a gag of gutta-percha to go over two lower molars, and applied it; and also took an impression of the lower jaw. He ordered a strong decoction of poppies to be constantly held in the mouth, as hot as it could be borne, and that only fluid diet should be taken.

When seen late next day, the patient was found to have suffered less pain, and the swelling was slightly reduced. Dr. Bellisario applied a gold plate made to cap the first and second left lower molars; the second bicuspid being absent, the first bicuspid and first molar were utilized for clasps. The gag, which was made so as just to keep the jaws from quite closing, was fitted without difficulty, and produced no more inconvenience than might have been expected. On the 5th the swelling was abating, and there was but little discharge; the incisors kept in position, but there was the same intense pain on touching the fractured tooth. On the 8th the swelling and inflammation were subsiding rapidly, and there was hardly any discharge from the gums. The poppy fomentations were discontinued, and the patient was directed to wash the mouth several times a day with a solution of 4 to 10 parts of phenol sodique. It was explained to him that the only chance of union taking place in the fractured tooth lay in its not being touched or disturbed, and that therefore the continuance of a soft diet for some time was essential. To this he agreed.

Dr. Bellisario saw him again on the 16th. The swelling had then entirely disappeared; the displaced teeth were in good position, and appeared to be doing well; not so much pain on touching the right lateral. He was told to continue the phenol sodique; the caps had to be added to a little, the mouth having come closer together; the gag was worn constantly, being only removed occasionally for the purpose of cleaning.

Two days later Dr. Bellisario received a letter from the patient, saying that he was obliged to go into the country on urgent business, and might be absent for two or three months, adding that he would be most careful not to use or touch the teeth.

Three months afterwards the patient's wife came to Sydney and called on Dr. Bellisario to say that her husband's teeth were all firm, and that he could use them perfectly. Just before leaving Sydney, Dr. Bellisario saw the patient himself. The three incisors which had been displaced, were in good position, and quite firm in their sockets; the fractured right lateral was thoroughly united, and if anything more unyielding than the other incisors. There was no tenderness on percussion, and the colour of the teeth was perfectly natural; evidently all the pulps were living.

The interesting feature in the case was the perfect union of the right lateral; when first seen, the parts could be freely moved and crepitus most distinctly felt. Dr. Bellisario added that he considered that nature, rest, and care had had a great deal more to do with the favourable result of the case than he could claim for his own share in the treatment.

Mr. S. J. Hutchinson said he had then under his care a patient who had met with an accident somewhat similar to that described by Dr. Bellisario, but he was sorry to say that the result of the case was not by any means so satisfactory. The patient, a lady, fractured her right upper central by a fall. She said she had distinctly felt crepitus, but he (Mr. Hutchinson) had not been able to satisfy himself of this fact. Unfortunately the patient did not apply for advice until some considerable time after the injury, when she was alarmed by the tooth turning black. As the pulp was evidently dead, Mr. Hutchinson opened up the cavity and removed it; the tooth was very painful, and there was a considerable amount of periostitis, which, however, was soon reduced by the application of leeches and fomentations. The tooth was still longer than its fellow, and the ultimate issue of the case must be considered doubtful.

The President then called upon Mr. Arthur Underwood for his paper. (*See page* 537.)

ODONTO-CHIRURGICAL SOCIETY.

(*Continued from p.* 385.)

Mr. W. Bowman Macleod then read a paper on "Chloroform and other Anæsthetics." (See page 398.)

The President said that Dr. Ronaldson might wish to make a few remarks on the paper.

Dr. Ronaldson said that having been associated with Mr. Macleod in the calamitous case to which reference had been made, he might be allowed to make a few remarks. He need not emphasise what Mr. Macleod had said as to the distressing nature of the case. He would only say that one who had not been present at such an event could not thoroughly understand what a painful occurrence it was. There were some points to be specially noted in the case. Firstly, The boy was just convalescent from measles. They knew that in the course of the acute specific fevers there occurred a fatty degeneration of the muscular tissues, including those of the heart, and it was possible that in measles as in severe fevers that might also occur. At the same time, the boy was completely convalescent and had been going out in the open air. On the other hand, he had been suffering for a fortnight from great pain, owing to the state of his teeth, and his strength was suffering in consequence He agreed, therefore, with Mr. Macleod in thinking the operation to be necessary, and advised that chloroform should be administered. Secondly, The boy was in a state of great nervous tension, and in consequence required much more chloroform to produce anæsthesia than any boy of his age to whom he had previously given it. Thirdly, The boy returned to partial consciousness before the conclusion of the operation, and that was an important point in the case. To begin with, except during the extraction of the first tooth, he was thoroughly under the influence of the anæsthetic, the jaw was relaxed, and Mr. Macleod had no difficulty in using his forceps. The return to partial consciousness occurred during the extraction of the last tooth, and so near the conclusion of the operation, few would have thought it necessary to stop and administer chloroform, especially when it is remembered that generally in such a condition of semi-unconsciousness little pain is felt, and if felt is seldom remembered. But it was just then apparently that the disastrous effect was produced. The respiration continued for a short time spontaneously, although feebly, and was supplemented vigorously and successfully, as regards the mere passage of air into and out of the lungs, by artificial respiration. The heart, however, never regained its power, and the boy died, "at the heart." He had no hesitation in expressing the opinion that death resulted from failure of the heart's action in consequence of shock, and that had there not been a partial return of consciousness before the conclusion of the operation, death might not have occurred. Probably death was due not to an overdose of chloroform, but to an underdose, or rather to its effect not being kept up long enough. After meeting with such a case one naturally thinks over all the circumstances connected with it, to consider whether any precautions had been omitted, and whether in future anything could be done to prevent such a disaster. Lately he had given morphia and atropia by subcutaneous injection about half-an-hour before administering chloroform. When morphia was given beforehand, less chloroform was required, and its anæsthetic effect lasted much longer, an object of some importance in operations about the mouth. It also, by diminishing general sensibility, lessened the danger of the reflex effect of pain on the heart. Atropia, by its power of paralysing the nerve endings of the vagus in the heart, diminished the possibility of reflex inhibition of the heart, so that a message sent up, say the fifth cranial nerve to the cardio inhibiting centre and down the vagus, was stopped as it got to the heart. The supposed advantages of giving morphia and atropia beforehand were therefore that less chloroform was required, the narcotic effect lasted longer, and there was less danger of shock. As regards the giving of the anæsthetic in dentistry, he would prefer that a patient getting it should lie flat on a table, with the head inclined over its edge. The advantages of such a position were less tendency to syncope, less tendency for the blood to run into the larynx, and less tendency to the falling back of the tongue, which, in extracting teeth from the lower jaw, so often impeded respiration.

These were the main points which he wished to bring under their notice.

A Member asked if Dr. Ronaldson had made a *post-mortem* examination?

Dr. Ronaldson said he did not think it necessary to do so, as it appeared sufficiently evident how the death occurred, and he did not care to add to the distressing circumstances of the case.

Dr Smith said Mr. Macleod some time ago had told him that he was to bring this very interesting case under the notice of the Society, and he had now heard with much interest the statement regarding it. He thought it to be his duty to say something in reference to it. Mr. Macleod had pointed to the number of cases in which he had given chloroform. But as an older man, he could speak from experience in chloroform since it was introduced in 1847. He had also given ether many times before chloroform was thought of, and when he said he had given chloroform three or four times a week since 1847 or some 5000 times, he believed that this was under the average. While attached to the Infirmary he had given it in all the major operations, and in midwifery as well as in dental operations; and he certainly believed that chloroform was quite capable of killing a patient. Death appeared to occur in two ways—either by failure of the heart's action, or arrest of the respiration—the one cause being syncope, and the other asphyxia, originating in the nervous centres. But he also believed that many of the deaths that were recorded in the newspapers were not deaths from chloroform at all, because, before chloroform was introduced, many cases occurred of patients dying on the operating table. These were set down to deaths by shock. He did not say that deaths did not occur from chloroform, for he believed that they never would have an anæsthetic capable of putting a man or an animal into such an unnatural condition as not to feel the extreme pain of taking out a tooth without entailing a certain amount of danger. It was too unnatural a condition to be without risk. With regard to the alleged deaths from chloroform, there were circumstances that would show that many of them were possibly not due to it. In a paper he read so long ago as 1858, he mentioned sixty cases where the *post-mortem* appearences were quite contrary; in eleven of these the heart had been found gorged with blood; in the rest it was empty, or nearly empty, while in some it was pale, and in others deeply tinged with blood. There were some who attributed all deaths to asphyxia, others to syncope and asphyxia, and many other theories were advanced in that way. These were cases were deaths had occurred *during* an anæsthetic condition; but in cases of death by poisoning they generally had the indications uniformly manifested. Suppose a man poisoned by arsenic, they found certain indications; and suppose that 120 men were poisoned, they would find the same indications. Many of the alleged deaths from chloroform, judged in this way, might not have been due to chloroform at all. He remembered when chloroform was first introduced, that the first case with the new anæsthetic was to be operated on at the Royal Infirmary, at 12 o'clock on a certain day. Professor Simpson was to give it, but never came. Professor Syme went on with the operation, as the man was in a serious condition, and performed the operation, but the man died in the meantime. Probably if chloroform had been used on that occasion it would have got the blame of the man's death, and it might have been discarded. He knew of Dr. Richard Mackenzie, attending a patient who had sustained a fracture of the leg. He intended exhibiting chloroform while setting the fracture, but had forgotten to bring any with him, and accordingly put up the leg in splints without it, and left. But before he had got very far some of the man's friends saw that something was wrong with him, and went after Dr. Mackenzie, but the man died before they returned. In another case a practitioner was going to extract a tooth from a woman who would not have it taken out without chloroform. She lay over her bed, where soon after she was found dead. In these cases chloroform would probably have been blamed as the cause of death. They must not be too sure, therefore, that chloroform killed every patient who died after it was administered. Although he never had the misfortune himself to meet with a fatal case, he had seen many cases that were nearly fatal; and he was convinced that every practitioner should be very cautious in administering any anæsthetic whatever. The use of ether was advantageous in many ways, but it was more suited for prolonged operations. It produced excitement, and the smell of ether lasted for days in a room. Nitrous oxide answered well for short operations, but he should not like to guarantee to a nervous patient that it would be absolutely successful. He would consider it is duty to say to the patient that he might feel the tail end of tne operation, as many of them did. In regard to the origin of anæsthetics, as Mr. Macleod had said, it was a very old story indeed. In the Garden of Eden, Adam is described as being put into a deep sleep before taking the rib from his side. (A laugh.) That illustration was brought forward by Sir James Simpson, a long time ago, in introducing the subject of chloroform. The Greeks and Romans were acquainted with anæsthetics.

Aurelianus, Pliny Dioscorides, and others speak of mandragora, and other anæsthetic agents. Shakespeare, in "Othello," makes Iago say of this ancient anæsthetic—

> "Not poppy, nor mandragora,
> Nor all the drowsy syrups of the world,
> Shall ever medicine thee to that sweet sleep
> Which thou ow'dst yesterday."

Then Snow had experimented with a perfect host of drugs which he used as anæsthetics. Nitrous oxide was used by Sir Humphrey Davy, in 1800, and in 1795 ether was used by Dr. Pearson. Simpson experimented with Dutch liquid, nitrate of ethyl, benzole, aldehyde, bisulphuret of carbon, amylene, chloride of ethyl; and the number of substances recommended as anæsthetics was legion. Perhaps the most useful of all was introduced by M. Grisolle in Paris, about the year 1855, being a mixture of ether and chloroform. It was exceedingly useful as an anæsthetic, but it did not do to be kept, because the balance between the two did not continue. The ether evaporated, and ultimately they had only chloroform remaining

(*To be continued.*)

Mr. Lawrence Vanderpant writes to the *Cosmos* :—

A SUGGESTION.—Many of your readers will remember with pleasure the hospitable manner in which they were treated on the occasion of their visit to London to attend the International Medical Congress, in 1881. They may not be aware that the British Scientific Association has arranged to visit this hemisphere next August. I am advised by my correspondents that a large number of British dentists will be of the party. Their objective point is Montreal, but they have arranged for a considerable tour in the States. It occurs to me, from my acquaintance on both sides, that the majority will be more than willing givers and receivers of any professional hospitality and courtesies that it may be convenient to bestow. For instance, an invitation from the different dental societies holding annual meetings about that time, addressed collectively to the Odontological Society, Leicester Square, London, W., and the arrangement of "clinics" at the New York and Philadelphia depots of the S. S. White Dental Manufacturing Co., would be giving form to the idea.

In the meantime, I should be happy to accommodate your European readers with advice as to travelling, hotels, etc. As your journal affords the best means of reaching the dental profession, I send you this suggestion.

THE THERAPEUTIC APPLICATION OF NITROUS OXIDE GAS. —From a series of experiments made in Prof. Botkin's laboratory in St. Petersburg, Dr. S. Klikowitsch (Virchows Archives xliv. 2) quoted by "Philadelphia Med. Times," draws the following conclusion: 1. Nitrous oxide gas is incapable of supporting respiration in animals and plants, and, like other indifferent gases, leads to death from asphyxia. The asphyxia produced by this gas, however, presents points of contrast to the asphyxia produced by other means. 2. Nitrous oxide gas produces no chemical or morphological changes in the blood of animals, but is dissolved in it and again eliminated, according to physical laws, without apparently being broken up into nitrogen and oxygen. 3. Anæsthesia with laughing gas is so closely associated with insufficient oxidation of the blood, that it cannot be regarded as absolutely without danger, especially in diseases of the heart, lungs, or blood-vessels. 4. The association of laughing gas with twenty per cent. of oxygen completely removes the possibility of asphyxia, and produces a number of results capable of therapeutic application. 5. Under the influence of the mixture of laughing gas and twenty per cent. of oxygen, in the majority of healthy subjects, the heart's pulsations are increased, the pulse-wave diminished, and the respiratory movements decreased in number and increased in depth; these effects pass off in from three to five minutes. 6. In six cases of weak heart action, the above gaseous mixture produced no unfavourable results; on the other hand, the pulse was decreased in frequency and increased in strength. These effects lasted from one to two hours. 7. In cases of disturbed respiratory innervation the mixture of laughing gas and oxygen regulated the respiratory rhythm and rapidly removed the subjective and objective signs of insufficient oxidation of the blood. 8. This gaseous mixture acts as a transient anæsthetic, and in angina pectoris causes a rapid removal of suffering. 9. It is preferable to chloroform as an anæsthetic in labor. 10. Vomiting and cough of reflex origin are arrested by a few inhalations of this mixture of gases.

ROYAL COLLEGE OF SURGEONS.—Mr. W. B. Paterson, M.R.C.S., L.D.S., of the Dental and St. Bartholomew's Hospitals, passed the final examination for the Fellowship of the College, held on May 29th, 30th and 31st.

CONTINUOUS GUM FACINGS.

We are informed that Mr. A. B. Verrier has consented to give a demonstration on this beautiful process at the Dental Manufacturing Company's Establishment, 3, Little Windmill Street, London, W., on Monday, 23rd inst. All gentlemen wishing to be present are requested to send their names to the secretary, that the necessary accommodation may be arranged, when the hour for the commencement will be communicated to them.

The National Health Exhibition has been opened in the buildings occupied by the Fisheries' Exhibition of last year. The sections on Food and processes connected with Food Preparation, will be of especial interest to Dentists and deserve their special study.

Saving Pulps.—Dr. Crandell, in Items of Interest, writes: For myself, I may say I always try to save all exposed pulps. I believe I have not dressed a tooth with a view of destroying the life of the pulp in five years. That I have succeeded in my efforts in all cases I do not say. I have used the Canada balsam some years, sometimes applying several coats over the exposed portions of pulp, regarding the anesthetic effects of chloroform upon the pulp tissue as valuable. I have never allowed oxyphosphate of zinc to come in contact with a pulp. I think we might very profitably discuss the causes of our failures in attempting to save exposed pulps. I should feel culpable, indeed, if I had had "supreme control of my patient" from early childhood, and allowed any pulp to become exposed. I hope we may have reliable statistics gathered from the practice and experience of earnest men to assist us in our estimates of methods and principles.

Dental Disease Among Dogs.—M. Capitan writing to the "Progress Medical," reports a case of erosion in a dog. The animal possessed almost all its teeth, but several of these showed erosions, of the pitted and cupped forms as well as erosions *en nappe*. These erosions were present exclusively in the enamel. They are strictly localized and are absolutely dissimilar to dental caries, appearing symmetrically in the teeth of either jaw. Most of the teeth were affected. It is diffficult to trace these abnormalities to a general nutritive disturbance. Magitot considers those erosions as identical with those occurring in the "Hutchinson's teeth," and derives the connection which M. Parrot finds between them and syphilis. He believes that they are due to nervous affections, eclampsia, etc., occurring during the eruption of the teeth. The opinion of an eminent veterinary surgeon is quoted, to the effect, that such erosions are common among dogs, and especially among those species which are nervous and more or less the subject of eclampsic attacks. It is only just to add, that M. Parrot does not admit that these erosions which, among dogs are in any way like those found in the human subject.

VACANCIES.

Owens College, Manchester.—Lecturer in Dental Surgery. Applications by June 16th.

Owens College, Manchester.—Special Lecturer in Dental Mechanics and Dental Metallurgy. Applications by June 16th.

Denbighshire Infirmary, Denbigh.—Honorary Surgeon Dentist. The Committee will proceed to the selection of an Hon. Surgeon Dentist to the above Institution, on 3rd July. Applicants must be duly qualified and registered as Dentists, and conduct a practice in the town of Denbigh. The election will be made by the governors at the next general meeting. Applications and testimonials to be sent to the secretary.

APPOINTMENTS.

Mr. Arthur Cocker, L.D.S.I. has been appointed Honorary Dental Surgeon to the Halifax Infirmary.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor of the "British Journal of Dental Science.

GOLD FILLING—IS IT JUSTIFIABLE?

Sir,—Your correspondent "Utility" evidently has not read your Journal for any length of time, otherwise he would not have written such a wandering and apologetic letter for indifferent work. His epistle, to my mind, is one in which he seems to desire his professional brethren to agree with him, that it is justifiable to do the most convenient work for as high a fee as can be obtained. "In the first place," writes he, "I will at once state that I have nothing to say against gold as a filling material, if properly inserted, making a perfect fitting, but how many Dentists outside a *few specialists* can do this in the majority of cases?" He tells us there are a great many reasons why so many gold plugs fail, naming but one, that is "want of practice." Now, Sir, would it not have been better if he had said it was the want of knowledge, instruction, ability, and judgment. Good work always has and always will give satisfaction, and command a reasonable fee. A gentleman practices Dental Surgery as a scientific profession, and not one in which his desire is to see how much money he can make with as little fatigue to himself as possible. He says "and it is not to be expected that he will wear himself out in packing gold into teeth for fees that do not equal the half of what could be earned in the same time, and *much more* easily by the use of plastics." But *he is expected* to do justice to every tooth that he touches, and *not* to abuse the confidence that his patient places in him, by his plastering up holes in teeth in a manner which admits of the least exertion to himself.

Good work consists in using the most suitable material for each particular case, and not by hard fast, one-sided rules.

As far as my own experience goes, I have found that *a man* who does indifferent gold work (or never attempts it), also does indifferent plastic fillings. The duration of fillings is subjected to many variations, but what will be most serviceable in each case is a matter of judgment and personal experience. I have seen gutta-percha that has stood 12 years; again, others not do service for 6 months; simply because they were inserted in improper positions. "To keep one's hand in" is a very unprofessional term. "Utility" is quite right if he cannot insert sound gold plugs, not to waste his own time and that of his patients. A course of instruction at one of our excellent Dental Schools would be the best thing for him to do.

Concerning Fees, I would refer him to the Editorial of May 15th, in this Journal.

In conclusion, could "Utility" ever suppose that the readers of this Scientific Journal would support such theories as he suggests.

Yours &c.,
DIGIT.

DENTAL HOSPITAL REPORTS. NATIONAL DENTAL HOSPITAL

Monthly Statement of Operations from April 30th, to May 31st, 1884.

Number of Patients attended		1508
Extractions	Children under 14	455
„	Adults	943
„	Under Nitrous Oxide	337
Gold Stoppings		92
Other Stoppings		324
Advice and Scaling		233
Irregularities of the Teeth		132
Miscellaneous		174
Total		2590

J. F Prager, Asst. *House Surgeon.*

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From May 1st to May 31st, 1884.

Extractions	Children under 14	575
	Adults	951
	Under Nitrous Oxide	408
Gold Stoppings		277
White Foil ditto		8
Plastic ditto		823
Irregularities of the Teeth treated mechanically		200
Miscellaneous Cases		299
Advice Cases		104
Total		3645

Harry L. Pillin, *House Surgeon.*

COMMUNICATIONS RECEIVED.

Mr. Morris Dennis; Mr. F. A. Bellamy (Lond.); Mr. A. Cocker (Halifax); Mr. Thomson (Melbourne); Mr. T. Amoore (Edinburgh); Sec. of British Dental Association; Dr. Langmore; Mr. W. E. Paterson; Mr. J. H. Mummery; Mr. D. Hepburn; Mr. Paul Buss (Berlin); Mr. F. Wilmer.

PAPERS RECEIVED.

Centrallblatt für Zahnheilkunde; Dental Practitioner; Progrés Dentaire; L'Odontologie; Revue Odontologique; Monattsschrift des Vereins Deutscher Zahnkunstler; Deutsche Monattschrift für Zahnheilkunde; Transactions of Odonto-Chirurgical Society of Scotland; Independent Practitioner Odontographic Journal; Pharmaceutical Journal; Dental Summary; L'A; Dentaire; Lancet; British Medical Journal; Medical Press; American Journal of Dental Science; Il Progreso Dental; Chemist and Druggist.an

British Journal of Dental Science.

No. 394. LONDON JULY 1, 1814. Vol. XXIX.

SYMPATHETIC SYMPTOMS, WITH HÆMORRHAGE BETWEEN THE UTERUS AND THE TEETH.

By Cav. Dr. Cacciaguerra of Catania.

In continuance of the observations on reflex actions between the uterus and the teeth, which were published in the number of March 15th, 1884, in your journal, I report a second case in which the symptoms in a decayed wisdom tooth showed the influence which the period of menstruation exercises—a periodical hæmorrhage occurring at the same time and with the same phases as that of the vaginal discharge.* The Signora A.E.C., 27 years of age, of a strong constitution, begged me to examine her right under-wisdom tooth, which I found badly decayed and from which blood was constantly oozing. It was decayed posteriorly, and the decay extended to the pulp cavity. The hæmorrhage had lasted two days, but I easily caused it to cease by dressing the cavity with a mastic preparation I use for preparing the cavity for filling. Two hours after the lady returned on account of a pulsating pain which was constantly increasing. I, at once, understood that it was the mastic which prevented the egress of the blood, and thus caused pain. Therefore, I removed it, the hæmorrhage showed itself, and little by little the pain ceased.

Suspecting that the symptoms depended upon a reflex action produced by some other organ, I enquired whether the lady was in good health. She replied that she was well, and that at that moment she had the menstrual discharge. I asked when the hæmorrhage of the tooth took place, and found that it commenced simultaneously with the commencement of the vaginal discharge. From this I inferred that the hæmorrhage from the tooth was reflex or supplementary, and it was better to leave a free egress to the discharge to avoid pain which had shewn itself in applying the mastic dressing. On the other hand the loss of blood was of little moment, the lady being of a strong constitution,—I asked to be allowed to see the tooth every day so that I might study its different consecutive phases. I observed, however, nothing but a diminution of the quantity of the blood in accordance with the decrease of the menstrual discharge, they both ending together.

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* See article upon the reflex action occurring between the uterus and teeth. No. 338 British Journal of Dental Science.

I let two days pass after the cessation of the hæmorrhage before I began the treatment of the pulp of the tooth.

I thought that the reflex hæmorrhage had proceeded from the capillaries at the lower end of the the pulp canal and that it extended all through its length up to the orifice of the canal where it came in contact with the decayed part of the tooth. In fact, when the bleeding had ceased, and I wished to probe the cavity, I was prevented from doing so by its extreme sensitiveness. I allowed three more days to pass, and on trying the dental canals again I found the sensitiveness had disappeared, and on probing still further, I discovered that there was no longer any trace of sensitiveness even to the extremity of the canal.

When all local and general irritation had passed, and having dressed the cavity for a week further, applying pure carbolic acid, I cleansed the walls carefully and filled with gutta percha.

For 28 days after the menstruation had ceased, no symptom of pain or of irritation shewed itself, but when that period returned, the lady began to feel uneasiness and pain in the filled tooth.

This I had thought probable, for very rarely do similar attacks cease after the first outbreak. Therefore, I had begged the patient to return as soon as she felt any uneasiness in the tooth. I found the pain had come on at the same time as the menstruation, and with the same pulsating character as on the preceding occasion. On removing the filling, the hæmorrhage from the pulp cavity shewed itself at once, and with its flow, the pain diminished. The flow of blood continued constantly for 2 or 3 hours, diminishing little by little until it ceased. I left the cavity open, and the treatment took a regular course, following, as I said, in a previous communication, the different phases of increasing and diminishing according to those of the menstrual discharge.

The third attack was similar in the symptoms to the two preceding ones. My patient desired that the tooth should be extracted, but I opposed her wish, because I considered that the affection was not a simple local one, but a reflex physiological action on the roots of a decayed molar which, being in a pathological condition, formed a favourable spot to shew itself. Believing also that the uterus is that organ which rules the physical and moral part of the woman,—and which being in an irritated state, reacted, causing a temporary annoyance to the gum. I have observed that generally as soon as the menstrual flow has ceased, the free border or edge of the gums becomes turgid, and frequently also that it throws out some discharge of pus. These symptoms frequently are associated with a disordered general state, according to the idiosyncrasy of the subject, and thus diseases of the gums are produced and shew themselves. Thus, the extraction of the tooth would have been very uncertain in its effects; and who could have assured the patient that if the evil had been arrested at that point, that a cure would have been the result, and that instead, if they had not shown itself by the effect of the repression of the hæmorrhage (effect indicated with the pulsating pain at the time of the paroxysm when the cavity was filled) and the danger of a alveolar periostitis, that fatal disease of the roots? Or, perhaps this hæmorrhage might have developed itself on more important organs. Thus, experience and science both urge me to maintain and continue the *statu quo.*

Decay, while using the antiseptic mastic, does not progress. The action of this preparation is the gradual cauterization, combined with a temporary filling of easy application, so that the patient could herself continue to use it by attending to my directions—that is, by keeping the tooth filled during the 28 days; and on feeling the commencement of pain, she could readily remove the stopping when the menstruation had ceased, she could then refill it, renewing the application every 24 hours some days, and when quiet, she could leave it up to the time of a new attack.

By this system the tooth participated in, as it were, all the uterine phases for fully 11 months, every time decreasing, and at last both pain and hæmorrhage ceased altogether.

The lady, on perceiving for the first time that all pain and annoyance from the tooth had ceased, came to have the tooth permanently filled. I, however, advised her to wait some months more, for, on probing the nerve canals, I found that all sensibility had not ceased. Therefore, I thought it more prudent to be sure of a complete recovery.

Three months afterwards I saw the lady again, and she then told me that during the last three periods of the menstruation period she had had no annoyance from the tooth, which I had especially begged should be filled. As the recovery ot the tooth then seemed assured, I proceeded to the ultimate and definitive filling.

For a long time I had an opportunity of seeing the lady at intervals. She assured me that the tooth continued perfectly well.

ENQUIRIES INTO THE PHYSICAL AND CHEMICAL CONSTITUTION OF THE TEETH IN HEALTH AND DISEASE.

By Dr. V. Galippe.

Whatever idea one may conceive as to the causes of dental caries, there is a preliminary study which stands far above every theory, chemical or parasitic; it is that of the soil, by which we mean the tooth itself considered in relation to its physical and chemical constitution. This study has been hitherto far too much neglected, and it seems to us very difficult to start any theory of any value about the etiology of caries, without having previously determined the conditions which generally precede the appearance of this lesion. These various conditions are intimately allied to the evolution of the individual himself, to his nutrition as well as to the various changes brought about in the general condition by the pathological states which he may either have acquired or inherited.

A tooth has, in itself, powers of resistance to the destructive forces, the effective value of which depends upon the general causes which we have just briefly enumerated.

This is what we shall call the *co-efficients of resistance.*

If we examine a series of teeth affected with caries, we find that unless the lesion be general, its distribution varies in different individuals, and that, in cases which might otherwise be compared, different teeth are affected.

Let us assume for a group of persons placed in the same pathological conditions, the existence of a single initial cause, and we shall find that the localisation of the effects will vary according to the points to which these may have been applied. In some, one tooth will be affected, in others, a different one.

What other conclusion could we draw from these facts, but that in the same dental apparatus one tooth taken by itself may have a lower *co-efficient of resistance* than either its neighbour or its fellow.

What is true for the teeth forming the dental apparatus of any one special person, is true also for the dental apparatus is looked upon as a whole in different individuals. Just as in one mouth taken alone there are some teeth which, owing to their composition, will not offer any great resistance to dental caries, so also the co-efficient of resistance will be found to vary in different individuals.

It is this co-efficient of resistance which is expressed by the physical properties and the chemical constitution of the teeth—factors intimately related to the present state of the individual, and, as a rule liable to undergo changes according to the mode of feeding, or hygienic and therapeutic measures—which I proposed to determine.

I ascertained first by chemical analyses that there is a constant relation between the physical properties of the teeth and their chemical constitution.

This starting point being acquired I then set about to determine an important physical property of the teeth, I mean their density.

The method I used is that known in treatises on physics, by the name of *the flask method.* The following are the primary results which I obtained.

The density of the teeth increases from childhood upwards to adult age.

In the adult, it is liable to variations according to the oscillations of nutrition in the healthy or diseased state.

The density of a tooth appears to be greater in man than in woman. But the number of teeth I have examined is not sufficiently large for me not to make some reservations; for the highest density I have found, viz., 2·24 was in the case of a woman, but this was an exceptional case.

On the other hand, the lowest density met with in the adult *i.e.*, 2·09, was in the case of a woman, who died in childbirth.

The latter observation would tend to support the opinion according to which caries is a usual concomitant of pregnancy owing to the insufficient mineral feeding of pregnant women and nurses.

Milk teeth are less dense than permanent ones.

This determination of the density of teeth also supports Mn. Ranvier's opinion, expressed by him in his lectures at the College de France, according to which the teeth which possess the most numerous and the largest interglobular spaces, are those most prone to caries: they are also those which have a comparatively low density.

The density of the teeth on the right side appears to be always a little in excess of those on the left.

A tooth is a complex organ made up of different tissues; its density is thus only the mean of the densities of its several tissues.

Let us take a set of teeth, the mean general density of which is 2·1081.

We find that the density of the teeth on the right side is 2·11, while that of those on the left is only 2·09.

If we take the mean density of the crowns, we find it is very high, being equal to 2·3077, while that of the roots falls to 1·97.

Let us pursue our analysis, and we shall find that the mean density of the crowns on the right side is 2·32, while that of those on the left is only 2·28.

In the case taken for an example, there was no difference in the case of the roots.

These facts have been found to be constant in the case of the milk teeth, and even in that of the teeth still included in the jaw.

We shall now have to show—

1st. That the chemical composition of a tooth follows the variations in its density.

2nd. That the distribution of caries is in accordance with the following factors:—Physical properties and chemical composition.

3rd. And also to ascertain whether teeth decay more frequently on the right side that on the left.

SALIVARY CALCULUS AND ITS REMOVAL.*

DR. J. FRANK MARRINER, OTTAWA, ILL.

The quantity and colour of salivary calculus, or tartar, as it is generally called, varies in different temperaments, and the general state of the health exercises a great influence in each case. Salivary calculus is composed of earthy salts and animal matter. Phosphate and carbonate of lime are its principal ingredients. A small quantity of animal fat also enters into its composition, and the relative proportions of its constituents vary according as it is hard or soft, or as the temperament of the individual from whose mouth it is taken, is favourable to health or otherwise; hence it is, that the analyses that have been made by different chemists differ. Nearly all persons are subject to deposits of salivary calculus, though not all alike. In some cases it collects in large quantities, and less so in others; its characteristics, both chemical and physical, are exceedingly variable. At times it is composed almost wholly of one ingredient, at other times of two or three. Neither is it always of the same color. In one case it is *black*, at other times dark brown, and again nearly white. It differs greatly in density. The black is hardest, the white softest. There are two kinds of tartar, both called black, but differing in many particulars. One kind is most generally found in the mouths of persons whose physical powers have been reduced by disease, intemperance, etc. It is found in quantities near the salivary ducts, firmly adhering to the teeth, and its removal is accomplished with considerable difficulty. It is very black, and is covered with a very offensive mucus.

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* Read before Illinois State Dental Society.

This form of salivary calculus is attended with deleterious consequences, not only to the gums, alveolar processes, and teeth, but to the general health. It causes the gums to inflame, suppurate and recede from the necks of the teeth, in some cases uncovering the root on one side its entire length. It grows constantly; it creeps, insinuates, causing death and destruction until the support is entirely destroyed, causing the tooth or teeth to fall out.

The secretions of the mouth are bad and rendered unfit to be taken into the stomach.

The brown tartar is less hard, and is found in large quantities on the lower front teeth, and also on all the teeth, but in less abundance.

Its removal is accomplished more easily than either of the other varieties. The effects of this are less injurious than of that last noticed, yet in many respects like it. It also causes the gums to inflame, swell, suppurate and recede from the teeth, destroying their support until they loosen and drop out.

Salivary calculus of a pale brown color is of a consistency much softer than either of the dark varieties, and is removed easily, but its effects are quite as disastrous as any other.

White tartar seldom accumulates in large quantities; it is very soft, causes but little irritation, but is by no means harmless, as it corodes and causes rapid decay of the teeth.

There is a sort of parallel between salivary and urinary deposits. We may have a deposit of lime salts whenever and wherever these salts exist in a fluid under certain conditions. A familiar example is the coating in the tea-kettle where hard water is used, an illustration that may be very properly employed for the instruction of our patients. These salts exist in saliva, and are either deposited or remain in solution. There is a variance as to quantity present in different individuals, and at different times and circumstances in the same individuals. These differences are modified by constitutions, habits, modes of life and exercise. They are increased in quantity by hard labour, and are kept in solution partly by motion.

Deposits are favoured in various ways: first, as the point of saturation is neared; second, as fluid loses motion; (the stillest place in the mouth is under the tongue in front adjoining the lower incisors; there is a constant flow and between the cheek and posterior molar above;) third, by rough surfaces, such as half-cleaned enamel; fourth, foreign substances; salivary calculus forms readily wherever any body exists for a nucleus; and last, mouths that are allowed to remain in a dirty condition, with particles liable to lodge next the gums or between the incisors below, are in every way extremely favourable to deposits.

And now as to remedies. As I understand it, they can nearly all be summed up in one word, viz., CLEANLINESS.

I have little faith in any so-called constitutional treatment. In ninety cases out of a hundred the teeth must be cleaned and kept as nearly so as possible by the combined effort of dentist and patient. Cleaning and polishing the teeth is an operation that cannot be performed at one sitting. It ordinarily takes two, and in some cases will require three or four. Nor is one operation of this kind, be it ever so thorough, going to answer for all time, or during the natural life. It must be done again and again, yearly, semi-yearly, and oftener if necessary. The idea is, keep them clean. If once a year will accomplish the work, very good; but keep them clean, if it has to be done every month in the year.

It is a notorious fact that the operation of removing salivary calculus and other deposits from the teeth, thoroughly cleaning and polishing them, is neglected oftener than any other in the line of our duty as dentists. And there are several reasons why this is so. Among them are ignorance, laziness, want of proper instruments with which to do this work, and the small amount paid us for such an operation. Ignorance and laziness may sound harsh in this connection, but however much we may dislike the sound of it, it is nevertheless true. And as to instruments, I think I am correct in saying that there exists a great deficiency in this line. You would be surprised to see and know what kind of instruments many of us are using for this most important work. And then we are poorly paid for this work, and there are several reasons also for this, one of which is that we, as dental advisers and teachers, have as yet failed to impress upon our patients its importance. Teach them its value, show them that upon *this* rests the success of every other operation performed in the mouth. Teach them this at the outset, the first sitting, which can be easily accomplished if we will but take the trouble. Intelligent patients take our advice and explanations kindly, and, when understood, readily submit to and acquiesce in our judgment. A proof of this is their readiness to endure both pain and inconvenience, and willingness to pay for the work.

I say we are poorly paid, another reason for this is, our patients do not, as a rule, understand its importance. They think it is but a few minutes' work that the dentist should always *throw in*. And the reason for this opinion is that dentists are in a large majority of cases in the habit of giving but a few minutes to this kind of work, and consequently the operation is not half performed. simply torn in pieces and left in a ragged condition, a disgrace to the operator, and instead of benefiting, only aggravates the case.

We know that a set of teeth so poorly cared for that the mouth has become filthy, is unsightly, uncleanly, and offensive, in fact, an abomination to one laying any claim to cleanliness; yet we, as dentists, are asked and expected to look for an hour or two into this cess pool of filth and to keep our eyes open and our stomachs right side up, while we are performing this upleasant and sometimes disgusting operation for little or next to nothing.

Who wonders that it is neglected, and yet when we see the benefits derived from it by our patients, we are led to ask, Why is it ever neglected?

Simply because we have not done our whole duty in this matter. We have not only failed to teach those coming into our hands the importance of it, but also have again and again failed to perform the operation in a thorough and faithful manner.

It appears to me to be a piece of sheer stupidity to put fillings into a dirty and diseased mouth without a preparation looking for a better state of things.

A lady came to me not long ago to see what could be done for an abcessed central incisor, said it had been under treatment for eight months, but without success. An examination showed her mouth to be in about the following condition; the incisors, cuspids and first bicuspids below were covered with salivary calculus, nothing to be seen but their cutting edges; both sides of the second bicuspids and molars above were in about the same condition; rings of salivary calculus around the necks of all the other teeth, with pus flowing out from the gums and around each tooth, and pressure upon the soft parts caused pus to ooze from every pore. And that tooth was under treatement eight months by a man calling himself a dentist, without a suggestion to the patient as to the true condition of her mouth. There is nothing a dentist can do that will redound more to his credit, or the pleasure and profit of his patient, than to remove salivary calculus and all deposits from the teeth. Thoroughness is all-important in this, because particles wherever left are so many nuclei for new deposits.

There is another matter in which many of us are to some extent at fault. It is in not laying more stress upon the necessity for the early training of children in this matter of cleanliness and care of the teeth. For instance, take each man's practice (the adult portion), and I venture to say not one patient in fifty knows how to brush his teeth properly, nor one in a hundred that the six year molars are not members of the deciduous set, or if they be cleanly or otherwise. If this be true, to whom are we to look for early training? Evidently not to them.

Then let us look this matter squarely in the face. It must be met; it can neither be set aside, assigned, nor distributed. The responsibility rests upon us as a profession. Then let us see that we so teach our patients that they may become competent to train the young, and by so doing cause them to assume the responsibility, or at least share it with us. The greater part of this teaching must of a necessity come from us.

And still another thing, though perhaps not properly belonging to this paper, I wish to speak of. I have had patients referred to me by physicians, and quite often of late, as suffering from scurvy, and have heard dentists talk of their patients having scurvy. In a practice of twenty-five years I have never seen a single case. Scurvy is a disease which is characterized by a depraved condition of the blood. In consequence of this morbid state of the blood there is a great debility of the system at large, with a tendency to congestion, hemorrhage, etc., in various parts of the body, and especially in the gums. It is said to have prevailed in badly fed armies and in besieged cities (which I do not believe).

Its ravages among seamen, however, have been most appalling. There are instances where whole crews have been prostrated by this scourge, as in the case of Lord Anson's memorable voyage. Scurvy is a systemic disease, as much so as typhus or typhoid fever. Scurvy resembles purpura very closely in its general symptoms, and yet, notwithstanding their similarity, they are essentially different. Scurvy is caused by a privation for a long time from fresh, succulent vegetables. In this disease there is extreme debility and depression of spirits, and mercury does positive harm, while a cure is rapidly effected by the use of fresh fruits and vegetables.

On the other hand, in purpura, mental and bodily depression are always absent, and mercury in most cases affords relief, while not a sign of relief follows the use of fruits and vegetables that are all-powerful in scurvy. And here, in my judgment, is where confusion began, by calling purpura, scurvy (land scurvy), a term entirely out of place I think. I do not believe such a disease as land scurvy ever did or ever will exist.

But why salivary calculus should ever, under any circumstances, be taken for scurvy, is a mystery to me at least. There are perhaps two symptoms—congestion and hemorrhage of the gums—which are symptoms of typhoid fever as of scurvy, for they are symptoms of typhoid fever, and they are to be relied upon in both mild and severe cases. How can scurvy exist in a land like ours, with a soil from ten to thirty inches deep, growing all kinds of vegetables, especially potatoes, and a thousand miles from God's salt ocean? I would not advise a dentist practicing in this State, at least, to ever tell his patients that they have scurvy, but instead, tell them the truth, that their mouths are diseased and filthy, caused by salivary calculus, which in ninety-nine cases in a hundred, is the parent of Riggs disease, or so-called, pyorrhœa alveolaris.

SPUTUM SEPTICÆMIA.—Dr. Miller, writing in the "Independent Practitioner," draws attention to the form of blood poisoning associated with the subcutaneous injection of human saliva. Just before the death of the animal, that is within twenty-four hours of the inoculation, cocci and diplococci appear in the blood in large numbers.

These micro-organisms have a gelatinous sheath which is identical with that found with the so-called pneumonia cocci. Dr. Miller asks the pertinent question, may not sufficient septic material exist in the mouth to give rise to septicæmia.

All practical surgeons are aware of the dangers of putrid absorption following upon operations about the tongue and jaws, and the frequency with which septic pneumonia occurs in such cases. These considerations lend an additional interest to Dr. Miller's remarks.

DANGERS OF TOOTH EXTRACTION.—Dr. Latimer, speaking before the New York Odontological Society, narrates how a physician, having narcotised a patient with ether, attempted to extract a wisdom tooth by the aid of Physick's forceps. The tooth, however, dropped from the forceps after snapping off short and entered the trachea. The unhappy woman felt no discomfort for a time, but eventually sought assistance at the hospital where Professor Weir performed Tracheotomy, and eventually fished up the aberrant tooth from out the bronchus. This was achieved with great difficulty by the aid of a piece of wire, formed into a loop, all the routine methods failing.

TREATMENT OF PYORRHŒA ALVEOLARIS.

By A. W. Harlan.*

(Continued from p. 535.)

Iodide of zinc has long been used by medical practitioners, in the form of a syrup for internal administration, and as an ointment externally for strumous inflammation and enlargements chorea, etc. It is made by digesting four parts of iodine with a little more than one part of granulated zinc and twenty parts of water, until the liquid has become colorless. On evaporation it crystallizes and is ready for use. It is freely soluble in water I present herewith a comparative table of the relative value of antiseptics and germ-destroyers, which as all may see places iodine almost at the head of the list.

This table is the result of a large number of experiments by M. Miguel, of the Observatoire de Montsouris, and shows the minimum quantity of the several antiseptics capable of preventing the development of germs and of adult bacteria in a liter of bouillon:

	GMS.		GMS.
Peroxide of hydrogen	0.05	Arsenious acid	6.00
Bichloride of mercury	0.07	Sulphate of strychnine	7.00
Iodine	0.25	Boracic acid	7 50
Chloride of gold	0.25	Arsenite of soda	9.00
Bichloride of platinum	0.30	Hydrate of chloral	9.30
Cyanhydric acid	0.40	Salicylate of soda	10 00
Bromine	0.60	Caustic soda	18.00
Chloroform	1 00	Borate of soda	70.00
Bichromate of potassa	1.20	Chlorhydrate of morphine	75.00
Ammoniacal gas	1.40	Alcohol	95.00
Thymic acid	2.00	Iodide of potassium	150.00
Phenic (carbolic) acid	3.20	Marine salt	165.00
Permanganate of potassa	3.50	Glycerin	225 00
Acetate of lead	3.60	Sulphate of ammonia	250.00
Alum	4.50	Hyposulphite of soda	275.00
Bromo-hydrate of quinine	5.50		

Corrosive sublimate has the most powerful effect on bacteria; an aqueous solution of 1 in 2,0000 kills the spores of bacilli in ten minutes. A solution of 1-5000 is thus a certain disinfectant, even when the time of exposure is very short. Koch finds that an aqueous solution of corrosive sublimate of 1-300000 puts a stop to the germination of bacterial spores. Sulphurous acid does not rank high as a disinfectant. Bacteria clinging to dry objects are killed after twenty or thirty minutes exposure to an atmosphere containing 1 volume per cent. of sulphurous acid. Spores of bacillus subtilis and bacillus anthracis are still capable of development after 96 hours exposure to an atmosphere of 5 to 6 vols. per cent. of sulphurous acid: even when moist they are very hard to kill with it. It is thus a very untrustworthy disinfectant, all the more so because it has little power of penetrating compact masses or bundles,—(Wolfhügel, Buchholtz, Schotte and Gärtner, Koch, Buchner). Carbolic acid in five per cent. solution will kill the spores of the anthrax bacillus in twenty-four hours. A three per cent. solution, however, will not do so in the same time. A solution of 1-400 checks the development of bacterial spores. Vapor of carbolic acid at ordinary temperatures is without effect; at 55° C. it kills the spores in two or three hours (Koch). Chloride of zinc in five per cent. solution has no effect on anthrax spores, even when they have lain in it for a month (Koch). Iodine, bromine, and chlorine are far more active than sulphurous acid. Bacilli cease to grow in the presence of iodine in the proportion of 1-5000, and of bromine 1-1500. Iodine water and chlorine water kill spores in one day; a five per cent. solution of chloride of lime in ten days. Benzoic acid, sodium benzoate, potassium chlorate, and quinine have little effect on spores. The following substances, even in dilute solution, have a restraining influence on bacterial development: allylic alcohol; oils of mustard, peppermint, turpentine, and cloves; thymol, chromic, picric, hydrochloric, and salicylic acids; quinine. The effect is perceptible in solutions of 1-300000 for oil of peppermint, of 1-800 for quinine, of 1-75000 for oil of turpentine. All disinfecting agents should be used in aqueous solution. In alcohol or oil they are either inactive or enfeebled. Bacillus spores still retain their power to germinate after lying for months in absolute alcohol. Pure oxygen is known to kill bacteria outright.

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*A paper read before the American Dental Association, August, 1883

This system of treatment, based on the primary injection of H_2O_2 into the pockets as a ready method of cleansing them and at the same time furnishing nascent oxygen to destroy the unclassified micro-organisms there present, and the subsequent injection of the zinc iodide, for its well-known stimulating and protective effects on the reparative material exuded, which is always ready for organization after being thus carefully protected, renders it almost certain that if careless probing or syringing of the pockets is prohibited, and the mouth is well cleansed with an antiseptic wash, a reproduction of lost tissues may be confidently anticipated.

In conclusion, permit to say that this remedy, when used faithfully in conjunction with peroxide of hydrogen, the most valuable germ-destroyer known up to the present time, arms us so well that I believe with expert handling of the probe to discover the concealed pocket, skillful removal of all deposits and edges of diseased bone, conjoined to an exact knowledge of constitutional needs, that we no longer need feel dismayed when brought face to face with a genuine case of pyorrhea alveolaris.

INFLUENCE OF MICRO-ORGANISMS UPON THE PRODUCTION OF CARIES.

By ARTHUR S. UNDERWOOD, M.R.C.S. and L.D.S., Eng.,*
(Lecturer on Dental Anatomy and Physiology at the Dental Hospital of London Medical School, &c)

(*Continued from p.* 540.)

THERE is no doubt that it is easy to establish a line of demarcation with the aid of a sharp instrument between tissue that you can easily prick and that which is quite hard : this line no doubt corresponds very nearly to the edge of the disease ; we have also come to the conclusion that it corresponds very nearly to the edge of the micro-organic invasion, that is, we have cut sections as near as we could to the healthy tissue, and have found them infected. We do not, however, attach so much weight to the fact as to the following experiment, which we think must be allowed to be absolutely conclusive.

Before we can explain its full weight we must enter into a few details of the method we employ to grow and cultivate special germs. We used to make a meat infusion, boil it, introduce it with antiseptic precautions into aseptic test tubes, and seal the tube with wool. If the fluid remained clear we knew it was pure ; if it became turbid within a day or two we knew our precautions had not been complete, and some germs had been introduced accidentally, and the tube was of course useless. If we wished to grow a special germ we rubbed a purified probe against the infected spot, and introduced it into the fluid replaced the wool cap, and the ensuing turbidity denoted the growth of the germ. The objection to this plan was that the turbidity spread through the entire fluid, and if we had, despite our precautions, introduced any other organisms besides those we specially intended to introduce, they all became inextricably mixed in the ensuing putrefaction. To obviate this we adopted Koch's plan of adding gelatine, and instead of a pure fluid making a pure jelly ; when this was inoculated in a particular spot the growth was confined to that spot, and if anything else dropped on the surface of the jelly it grew there quite separate. Under these circumstances we noticed that different forms of germ grew in quite different ways, some, for instance, forming a white ball, others a mass of spiculæ, others wavy lines; these peculiarities of growth could be easily reproduced in other flasks by a second inoculation, until we found it quite easy to separate each variety and grow it by itself without any extraneous growth to confuse the result. We have brought down some flasks with growth going on to show you to-night. Well, we proceeded to inoculate flasks with those deepest portions of softened tissue which formed the most outlying layer of changed dentine, and we found that from these portions a growth of organisms proceeded, proving beyond doubt that organisms were contained in the pieces inoculated. This is not a doubtful experiment; it absolutely demonstrates that the deepest portions of the softened tissue contained organisms, and that if there exist any zone of alteration beyond them it is so microscopically narrow that we have not been able to detach a fragment of it.

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*Read before the Odontological Society of Great Britain.

We do not, however, deny that there is a great probability that the advance guard of micro-organisms may be surrounded, and, *to a microscopical extent only*, preceded by a softening, the result of the action of those acids which they themselves produce,—we shall be able to show that they do generate acids capable of softening dentine, and therefore we should expect to find this effect slightly in advance of their presence,—but this is hypothesis merely. We would further add that the transition from very carious tissue to that which seems quite healthy to the eye and the touch is, in the greater number of cases, more sudden than is generally supposed, and allows but little space for this non-infected zone; to convince one-selfof this it is only necessary to split a number of carious teeth and prick the surfaces. One more fact should be borne in mind in this connection, namely, that healthy dentine softened by a weak acid does not look different under the microscope from healthy dentine cut fresh, and it is therefore impossible to detect the softening microscopically; the tubes are not larger, nor are they irregular, as is the case in carious dentine—in fact, the existence of such a softened and uninfected zone separating the infected from the non-infected dentine is a matter so difficult to demonstrate that we do not think much value is to be attached to it.

We now come to the third point, viz., that it is not possible to produce caries or anything resembling it, by subjecting teeth to the action of acid fluids in flasks out of the mouth, provided the flasks be kept in a strictly aseptic condition. We do not think this point has ever been disputed, and we feel in a position to state that the evidence upon which it rests is incontrovertible; but before discussing it, and the point that follows it, we think it will not be a waste of time to explain what we mean by a change resembling caries. We mean a change by which the tissue affected is made distinguishable from that which is normal to the naked eye and touch under the microscope. To the naked eye it must become discoloured,—we only mean changed in colour, and not necessarily brown; the surface loses its polish, or, if moist, the affected part must be separable from the healthy with an instrument; to the touch it must become softer; under the microscope the channels must become dilated at the expense of the matrix. In 1881 we exhibited several flasks in which infusions of meat and saliva containing malic, butyric, and other acids had been allowed to act upon exposed dentine for periods varying from one to three years; the teeth were liable to caries because they had suffered already from it; healthy portions were denuded of enamel and partially protected by wax, a certain part being left exposed, with no perceptible result whatever. Of course a strong acid, or a large amount of acid, would decalcify the tooth, but this does not resemble carious change.

These experiments were sufficiently numerous and conclusive to warrant us in passing on to the fourth point of this investigation, and this will detain us longer than any of the others, as it is in this direction that we have experienced the greatest difficulty and the most perplexing results.

We were so fully alive to the overwhelming difficulties attending any attempt to reproduce out of the mouth the complicated conditions existing therein, that we should have felt anything but sanguine but for a curious accident that encouraged us to proceed in this direction. We will therefore commence by telling you the particulars of this accident.

At the Congress in August, 1881, we exhibited, among other flasks, a series intended to illustrate the fact that no change resembling caries could be induced upon the surfaces of teeth under aseptic conditions. These flasks all contained an infusion of meat and saliva with malic and butyric acid and teeth susceptible of caries, the surfaces ground down to expose the dentine, part of the exposed surface being protected with wax, so that any loss of substance could be at once detected in the exposed part. Now these flasks, which were labelled i, iii, iv, v, vi, had remained perfectly pure from the time they were put up, June, 1880, till the Congress, 1881, that is, fourteen months, and no visible change had taken place in the exposed surfaces. In taking them home in a bag, flasks i, iv, and v fell down, allowing the fluid to come in contact with the

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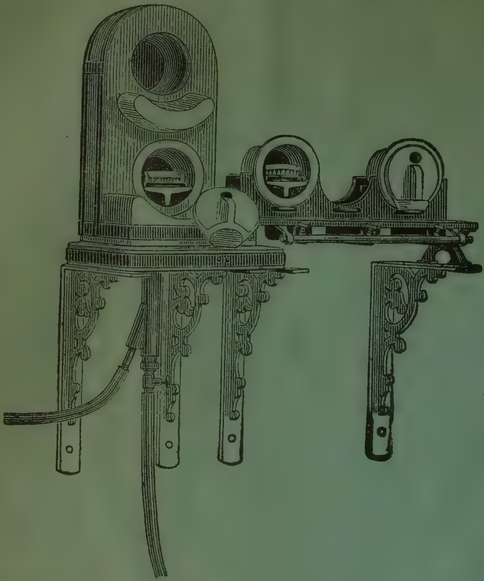

These Furnaces, which are the outcome of years of experiments, have been brought to the minimum of difficulty with the maximum of facility for working, for, although only six inches cube, sufficient heat can be produced in from five to ten minutes to fuse the gum-body or enamel for continuous gum facings (or work) for mounting on vulcanite, celluloid, or gold.

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cap covering the flasks; iii and vi remained upright.

In the course of a few days, flasks i, iv, and v, which had tumbled down, became turbid; iii and vi remained, of course, pure. By the 5th of December, 1881, iii and vi were to all appearances, as before, unaltered; but the teeth in i, iv, and v were already discoloured brown; moreover, the discoloured parts were on the surfaces slightly softened, and although the change was so shallow that we could not obtain a good thin section of it, we could see that the tubes were enlarged and contained a material that stained readily; owing to the thickness of the section, we could not, unfortunately, identify. Now, whatever this change was, it was manifestly dependent upon the introduction of organisms; nothing else was introduced. Fourteen months' immersion in the fluid when aseptic failed to change the teeth at all; four months in the same fluid plus germs produced a change; the same additional four months in the sister flasks produced no change at all;—this seemed an important addition to the facts in our possession at the Congress. The next stage was less satisfactory: the change did not seem to progress; do what we would, we could not produce a considerable change. We conceived that this might arise from the fact that several important conditions favourable to the activity of the germs in the mouth were absent in the flask. First, the temperature of the body; second, opportunities for lodgment; third, constant renewal; fourth, unlimited and varied pabulum; we therefore contrived a very elaborate experiment in which we proposed to assemble all these conditions, and as many more as we could think of.

THE SURGICAL AND MECHANICAL TREATMENT OF CLEFT PALATE.*

By Mr. Campion

Continued from page 545.

In 1786, Pierre Fouchard described, as a support for the palate, an ingenious arrangement of metallic wings worked into position across the margins of the cleft, by turning a screw in the centre of the palate after the introduction of the apparatus. Up till 1820 the attempts to remedy the deformity by mechanical means had been entirely confined to the hard palate; but in this year, M. De la Barre described and illustrated the result of the first attempt to make an artificial velum. The substance employed was india-rubber, and to this gentleman must be attributed the credit of being the first to make use of the only material which could be adapted to a velum. But his apparatus was so complicated and liable to disarrangement that it is not surprising it never came into general use.

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* A Paper read before the Students' Society of Dental Hospital of London. May 12th, 1884.

Eight years later, *i.e.* in 1828, Mr. James Snell, a London surgeon published a work on Artificial Palates, in which he alluded to a number of cases he had treated, and described the kind of apparatus he had made use of. In his treatise we have the first definite reference to congenital cleft, and the first insistance on the necessity of procuring a correct model of the defective parts on which to form the oblurator. His first apparatus consisted of a gold palate piece, to the back of which were attached two pieces of india-rubber to cover the defect in the velum; to the lower borders of these a small piece of the same material was secured by a gold hinge to imitate the natural uvula. A vertical plate of ivory was fastened to the superior surface of the palate piece to imitate the absent septum narium, and the whole held in position by clasps round the molars. The description of his second and improved obturator is to me quite unintelligible, and in the absence of any drawing to elucidate the matter it is impossible to be sure in what form the instrument was made. Dr. Kingsley in his work on Oral Deformities expresses an opinion that the description implies a triple velum, not unlike in principle one to be noticed as the introduction of Mr. Stearn, 20 years later; but the fact of Snell's stating that the soft velum was placed in a frame of gold seems to me to be opposed to this idea. Certain it is, however, that whatever the precise form of his instrument, Snell, if we may accept his statements, achieved some remarkable successes in the treatment both of congenital and acquired cleft palate.

First, tuition is absolutely necessary, both that the muscles of the palate may be trained to their new functions, and that the old and vicious habit of raising the back of the tongue to close the cleft, may be irradicated.

Secondly, the palate may be so contracted as not to admit of being raised enough to properly open the passage to the mouth and shut off that of the nose.

Thirdly, the palate may be too short to allow it when raised by its muscles to reach the back of the pharynx.

These conditions seem to indicate that an operation should not be undertaken where there is only scanty material in the flaps with which to form the palate; nor where they are so short as to give no reasonable hope of the palate, when united, being long enough to reach, or nearly reach the back of the pharynx: for, while in such a case, it would be impossible to lengthen the palate when once the operation has been successfully performed, this might easily have been done had mechanical treatment been adopted.

On the other hand, in those cases selected with judgment, where there seems a reasonable prospect of success as regards phonation, it is undoubtedly better that the cleft should be closed with natural tissue than with an apparatus which requires constant and careful cleansing and occasional renewing, and is naturally liable to an accident, which places the patient for a time in his former disagreeable position. For my own part, while I think that at the present time many cases are operated on where mechanical treatment would yield better results, I cannot by any means go so far as some American gentlemen, who maintain that in no instance should the operation be practised. The question should be decided in each individual case by an unprejudiced surgeon, who has had a large experience in both methods of treatment. His experience will enable him to decide on the best method for that particular case, and he will advise the patient accordingly. But, it should be remembered that the ultimate result will depend, to a great extent, on the subsequent tuition, whether the treatment be that of the knife, or of an artificial velum.

In 1845, Mr. Stearn, an American Surgeon introduced to the notice of the medical profession, through the medium of the *Lancet*, an elastic velum on a new principle. It consisted of two lateral flaps joined together in front, the outer side of each being grooved to receive the corresponding margin of the cleft. They were arranged so as to approach or separate from one another according to the varying breath of the fissure, while to prevent air passing between them, a third part, or valve was added, over which the side pieces could slide when the contraction or enlarging of the left caused them to approach or leave one another. The instrument which I pass round will, however, explain its form more perfectly.

In 1857, Mr. Edwin Sercombe described the form of apparatus he used, in a paper read before the Odontological Society. He says, "My velum is made of two pieces of vulcanised india-rubber, the larger piece extremely thin, the smaller much thicker." The shape will be seen in the specimen I hand round. "They are attached by sewing to the posterior margin of the plate, which has a single line of holes punched in it for this purpose. The larger piece should be extremely thin, as it is absolutely necessary that it should adapt itself with great readiness and completeness to the ever-varying sides of the fissure; but a piece of such tenacity as is necessary to secure this vital point, weighted with mucous, would quickly droop but for the support which is given to it by the smaller and stouter piece which lies immediately underneath it." Mr. Sercombe found that an instrument of this form, in more than one instance, restored to the patient a distinct articulation. He also claimed to have recognised and acted on the principle ennunciated by Mr. Stearn, but the apparatus I have shown will hardly bear out this statement, that principle being that the velum should clasp the edges of the flaps so as to partake in their every movement, and yet in no way prevent or interefere with the narrowing of the fissure which takes place during deglutition.

In 1864, Dr. Norman Kingsley, of New York, brought before the Odontological Society a method of remedying the defect, which contained two new and very important principles. The first was taking a correct impression of the cleft with plaster of Paris: the second, vulcanising the velum in metal moulds, whereby a much higher degree of finish is obtainable and the apparatus consequently worn with much more comfort, while reduplication is also made easy. The instrument itself was not entirely new, the principle of its form being that of Stearn's, from which indeed it differed only in detail. The criticisms of the members of the Society were adverse on account of its complicated nature, and the difficulties of construction, which were calculated to place it out of reach of patients of only moderate means. Dr. Kingsley, therefore, with most praiseworthy zeal turned his attention to simplifying it, and on December the 11th of the same year conceived and made a model of the form of velum, which I here show. In this, which he has since used with most gratifying success, the edges of the cleft are allowed to approach each other between the two plates of soft rubber which embrace them, and of which the instrument is composed. For simplicity and effectiveness this exceeds all others, and its results, when accurately fitted and intelligently made use of, leave little or nothing to be desired.

(To be continued.)

Annual Meeting of the British Dental Association.—The Association Journal understands that no definite arrangements have as yet been come to with regard to this meeting, beyond that it is to take place at Edinburgh on August 28th, 29th, and 30th. A programme is shortly to be issued.

Diseased Teeth among the Ancients.—From the tombs of Volterra, in Etruria, a large number of teeth have been collected. They revealed abundant evidence of the most extensive decay, and there was periostitis.

British Journal of Dental Science,

LONDON, JULY 1, 1884.

SHOULD DENTISTS PRESCRIBE?

This is a question constantly upon the *tapis* and one which forces itself forward at the present time with more than usual vehemence. We would narrow the question to whether those who do not hold a medical or surgical qualification other than the L. D. S., should take upon themselves the grave responsibility of prescribing.

A speaker at a recent meeting of the Midland Odontological Society was very emphatic in the way in which he accused medical men of ignorance about the teeth and their function. He believes dentists are, as a rule, better educated and more highly endowed than the ruck of general practitioners. Whether such statements are strictly accurate, is at present beside our province to enquire, we only cite them to insist upon the fact that it is owing to the mutual distrust which in too many cases exists between the dentist and the medical practitioner which gives rise to such questions as we are now considering. The dentist believes he can cope with the evil arising *from* the teeth as well as those belonging to the teeth; he esteems but lightly the professional knowledge of the medical practitioner upon these points, and even hints that in very many cases he exhibits profound ignorance, and too often treats a symptom—dyspepsia for example, when he should be curing the exciting cause, namely, the defective or diseased teeth. Nor does the dentist himself pass without animadversion. It is only too frequently the case that the general practitioner regards him as a good deal "less than kith." He fails to understand that the dental curriculum is wide in scope, and deals with matters other than tooth filling and extraction, and so he gets into the way of regarding the dentist as a mere manipulator, and resents his intrusion into the field of practical medicine, a field he considers wholly his own. One readily sees that such misunderstandings must render collision inevitable and tend to embitter the mutual relation of men who should be not only closely knit in professional friendship, but should also be eventually aiding each other in a crusade against disease and wretchedness.

We see the same evil occurring in our hospitals. It is not seldom that we hear of asperities occurring in the general hospitals which provide a special curriculum for dental students; the students of medicine and the students of dentistry, do not recognise each other as fellow-workers upon one and the same platform with common aims and identical interests.

Were all students of general medicine and surgery compelled to attend an elementary series of lectures or clinical illustrations upon the treatment of dental diseases, we should find them less ignorant of the range and method of modern dentistry, while dentists and dental students would recognise that they, as specialists should seek rather to perfect their own methods and accumulate that practical experience which is the alpha and omega of successful dentistry, rather than wander into the treatment of general diseases which require something more than mere bookwork prescriptions in their management.

That surgical attention of the teeth and associated structures should rest with dentists, involves that they should prescribe local remedies, but when a dentist extends his practice to the treatment of general weakness or constitutional complaint, he lays himself open to reprisals by the family doctor such as he would be the first to decry. It is an unfortunate circumstance, that children's teeth only too often fall a prey to ignorance and inexpertness at the hands of the doctor, but we believe and trust that this is every year becoming less frequent, and that as dentists assume their just position as scientific specialists, so will the medical profession at large recognise their claims and true professional status and rightful field of practice. Dentists will, we believe, do wisely in "sticking to their own last," and avoiding anything like an invasion of the domain of physic.

SHOULD DENTISTS ADMINISTER NITROUS OXIDE GAS SINGLE HANDED?—The *Morning Post* thinks not.—To run any risk is unwise, and unless forced to incur so grave a responsibility, as must rest with a person who has not special practice, our contemporary considers it harmful to the patient, the administrator, and the agent employed. We cannot but endorse the following remark, which enquires "whether the theory and practice of this and other anæsthetics is sufficiently taught in our medical schools. A special certificate from an expert is required to qualify a medical practitioner for performing the very simple operation of vaccination; and it might be well to apply at least an equal test to the student's knowledge of the art of sending his patient to the realms of happy unconsciousness, and what is more, of bringing him back again."

DEFORMITY OF UPPER JAW AND ADENOID GROWTHS OF PHARYNX.—The correspondent of the *Lancet* writes:—At the twelfth session of the French Association for the Advancement of Science, held at Rouen, M. David, of Paris, read a paper in which he maintained that adenoid vegetations, which are so frequently developed in the naso-pharyngeal cavity of the infant, reveal themselves externally by a peculiar aspect of the face. This modification of the physiognomy consists essentially in a deformity of the superior maxillary bone. The buccal portion of this bone becomes flattened transversely, so that the dental arch does not keep its natural shape and dimensions; and the hard palate becomes high and narrow. Irregularity of the teeth follows, because they do not alter, but the space for their accommodation is lessened. For the most part they tend to project in a mass forwards, so that the lower lip may be partially hidden by the front upper teeth. This special conformation of the palatal arch has hitherto received different interpretations. An ethnological signification has been accorded it. Some regard it as a sign of superiority, others of inferiority, of race.

OPERATIVE TREATMENT OF FACIAL NEURALGIA.—Dr. Heustis, Professor of Surgery in the Alabama Medical College, describes, according to the "Philadelphia Medical News," an operation which he performed on a gentleman above seventy, who was in good health in all other respects, except that he suffered from severe facial neuralgia, affecting both the infra and supra-orbital nerves. As the patient had become much weakened by the severity of the pain and his inability to eat his food, it was deemed desirable to render an operation performed upon the infra-orbital as simple as possible, consistently with its efficiency. "Therefore, discarding Carnochan's operation of trephining the antrum, and following up the nerve beneath the orbit and removing it, and Langenbeck's slighter one of dividing the nerve with a tenotome, and drawing it out through the infra-orbital foramen, I merely cut down upon the foramen, and with a fine steel drill, such as dentists use, improvised of piano wire, drilled out the nerve in its entire length, as far back as the sphero-maxillary fissure." The relief obtained was immediate and complete, and had so continued two months after the operation.

MISPLACED TEETH.—Recently, in examining a patient who had for some time been troubled with nasal catarrh, there was found according to a contemporary, on the floor of the left nares, four centimeters back from the nostril, a hard substance, feeling when touched with a probe like bone. On seizing this with forceps the patient experienced severe pain, like that caused by striking a sensitive tooth, and for several hours afterward he suffered from pain like a severe toothache. Ether was administered, and the foreign body was caught in a snare, used for nasal tumors, it was found to be a supernumerary tooth, resembling closely the cuspid, and measuring two centimeters in length. About five millimeters of the tip of the root had been exposed in the nasal cavity, and below this the tooth was covered with soft tissue, which was adhered to it down to the crown. The dentine of the crown was perfect, excepting a small perforation at its apex; but within the tooth was decayed. How long this tooth had been projecting into the nasal cavity could not be determined, but it must have been a considerable time, for the portion of the apex of the root which was uncovered had lost by erosion about a millimeter in thickness from its entire circumference.

It is comparatively rare for teeth to grow in the roof of the mouth or nasal cavities, yet several such cases have been met with. In nearly all instances the "wild tooth," as it is called by the laity, is found to be a supernumerary tooth or a misplaced cuspid.

It is stated that, from the appearance of tartar and green stain upon the apex of the crown, the tooth must have occupied a diagonal position in the hard palate, the crown being in the roof of the mouth, pointing toward the central incisors, and the apex of the root in the naris, pointing posteriorly. A ring of tartar encircled the crown from about three millimeters below the upper surface to nine millimeters above the lower surface, and that part of the crown below the ring was covered with a fungous growth, which proved that the part only was exposed in the mouth. The tooth had decayed because of the imperfectly formed apex of the crown, until the pulp had become exposed and death resulted, causing alveolar abscess, the sack of which came away with the tooth. While it is not uncommon to find supernumerary teeth in the roof and anterior part of the mouth, it is very rare to find the apex penetrating the nares.

INTERNATIONAL MEDICAL CONGRESS.—It is to be regretted that it has not been arranged for a special section upon dentistry and allied subjects, for the forthcoming meeting at Copenhagen in September. It appears that there will be a sub-section under the section of surgery devoted to dental surgery, but there is some doubt as to whether there will be a sufficiently large number of dentists present to make even this concession necessary. We confidently trust that England will not be behind hand in sending a strong contingent of dentists to represent a branch of surgery, which is increasing in importance day by day.

Dental Folklore.—Dr. Perine, writing in his well-known racy sentences, is recounting to the readers of the New England Journal of Dentistry, the history of the Dental Art. He gives an amusing anecdote of an itinerant dentist who got hold of a well-to-do, but intemperate farmer, for whom he fitted a set of artificial teeth, and then he and his fee went on their way rejoicing. He set out for the next town. The distance being thirty miles, he was obliged to pass a night at a wayside tavern where, the next morning, he was at an early hour called upon by his late patron. "Look a here," shouted the irate tiller of the soil, confronting the astonished tooth manipulator, "what do yer take me fer, anyhow—a huskin' machine? Look at this 'ere corn-cob what you put inter my mouth yesterday; there ain't a kernel left on the infernal thing," and the indignant rustic produced the bone base from which every tooth had disappeared. "Good heavens!" exclaimed the professional gentleman, in apparent astonishment, and then, as if seized with a sudden thought, he inquired, "what did you eat after those teeth were put into your mouth?"—"Mush and milk," replied the farmer.—"And what did you drink?"—"Apple brandy," was the reply.—"That accounts for it," exclaimed the practitioner, impressively. "You see, sir, the teeth I made you were attached to a base composed of hippopotamus ivory. Now, sir, you must understand that the hippopotamus is an animal which lives a greater part of the time in water. In the temperance sense it is totally an abstemious animal, and when the fiery beverage you are accustomed to came in contact with the fragment of the animal's anatomy, to which your artificial teeth were attached, the shock was great, and actually produced so decided a shock among the nerves contained in the bone that the teeth were dislodged from their setting."—If not satisfied with our friend's explanation, it is safe to conjecture that the farmer withdrew from the presence of his dentist somewhat mystified. —These were the good old days.

A National Dental Association for America.—This is some agitation a-foot in America to start an Association of Dentists, who may fairly be taken as representing the profession in America as a whole. There can be little doubt that such an Institution would prove a most valuable one, and it seems almost marvellous that it has not long since been started.

ANTIDOTE TO ARSENIC.—Dr. James B. Mc Caw communicates the following formula to the Archives of Dentistry, as a sure antidote in cases of Arsenic poisoning.

R.—Tinct. Ferr. Perchlor.	Drm j.
Sodæ Bicarb.	Drm j.
Aqua Calida	Oz. iij—iv.

This may be taken almost *ad. lib.*

WAX PAPER.—Dipping the paper into melted wax or paraffin produces a water-proof paper; but the latter has the disadvantage of being too brittle and allowing the wax or paraffin to peal off. A much better result is obtained by mixing the wax with certain soft resinous bodies. The following formula recommended by a contemporary, answers well. Dissolve ½ part of bleached white caoutchouc in 1 part of liquified white Venice turpentine, add 10 parts of wax, and melt the whole together on the water bath. This mass is applied with a broad brush on paper, from which it will not separate. On cooling, the coat of wax may be polished by rubbing with a smooth rag.

TAKING AN ARTICULATION.—Dr. A. E. Matterson, before the Illinois State Dental Association, says: "In full upper sets I use the plaster impression for obtaining the articulation by the following method: varnish, oil, and fill the impression; after waiting for it to harden, spring the tray from the impression and carefully trim the outer rim from the cast sufficiently to permit the removal of the impression, and trim so as to represent very nearly a celluloid blank with the outer rim off; varnish and melt wax on the articulating surface, and while warm, introduce in the mouth; as the patient bites into the wax so will you have the articulation."

TRIMMING LOWER PLATES.—There can be no doubt of the importance of trimming lower plates efficiently. There are many instances of lower sets in which the edges of the plate are allowed to extend so as to encroach upon or confine the soft parts and make the mouth very sore. Persons who had 'persevered' in wearing such sets for a year or two upon the assurance of *their dentist* that the mouth would get used to the plate and get well, but instead, they had sustained serious injury and a vast amount of useless suffering. A proper trimming of the plate was followed by a speedy and complete cure.

Filling Roots.—A method which is strongly advocated in America may be described as follows: — Fill roots (excepting where there is an open foramen) with a thick solution of gutta percha or Hill's stopping in chloroform, carried on a few fibres of prepared cotton. The *rationale* of this treatment, is as follows:—Prepared cotton being actively absorbent, takes up intimately the semi-liquid mass and forms with it a hermetical sealing for the foramen. Having become saturated with the gutta percha it will not afterward absorb moisture through either the foramen or the walls of the root, nor will it in time dissolve, as well as artificial. The advantages are:—

1st. Ease of manipulation, (in small canals especially).
2nd. Certainty of reaching the apex.
3rd. Insolubility.

The cotton wool alone from which the oil has not been removed, would make a good root stopping, (as some have claimed it does in their practice), provided it could always be tightly packed without any recoil. The *oil* in the cotton is depended upon by those who thus use cotton, to repel moisture. But the presence of oil in ordinary unprepared cotton contraindicates its use as a vehicle for gutta percha in solution. Absorbent cotton, from which all oil has been extracted should be used.

There is no filling material that can be so easily and certainly pushed to the apex of a small root as gutta percha in solution absorbed by cotton. It works like so much oil. If it should chance to clog, the shred of cotton wool may be readily withdrawn and softened for a second trial.

About Lower Impressions.—Dr. Ottofy, an American Dentist, says: "Many impressions, especially lower ones, are taken in such a way as to press the muscles which are attached to the alveolar process, into unnatural positions. A plate made to fit such an impression is sure to give pain. We should use in upper cases cups with very short rims, and in full lower cases the cup with the rim entirely cut away so as to leave the muscles and soft parts in as near natural positions as possible."

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the Publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against one another. All makers, vendors, and inventors, are invited, with strict impartialisy, to contribute towards this end.

MR. LEEMING'S "BITE FRAME."

Mr. Leeming has designed an ingenious bite frame that is capable of great nicity of adjustment, with equal facility of re-adjustment when necessary, without remounting the models. The frame is a little massive, but stands steadily in consequence, and the alteration movements, forward, backward, right, left, and upwards, are all controlled by set screws. Both models are readily removable from the frame, the upper indeed is only pivotted on the frame by slots, but so delicately arranged with guides that it is impossible to close it out of place; and the lower requires but the withdrawal of a pin to release it, or rather its metallic attachment, this also can only be retnrned in its exact position.

Mr. Leeming also suggests for cleanliness the use of metal cups attached to metal frames to be screwed under a polishing lathe, to contain polishing materials. These cups are so arranged that by drawing them forward they are handy for use, whilst when pushed backwards they are not only out of the way, but so covered as to keep the contents free from dust, &c.

DENTISTRY IN THE XVIIITH CENTURY.- The following quaint advertisement appears in a brochure, bearing date 1716:—" Artificial teeth set in so well as to eat with them, and not to be discovered from natural; nor to be taken out at night as is by some falsely suggested; but may be worn years together. They are an ornament to the mouth, and helps (*sic*!) speech. Also teeth cleaned and drawn by John Watts, operator, who applies himself wholly to the said business, and lies in Racquet Court, Fleet-Street; in London." One can well fancy bewigged fops and dames, stately in wide spreading hoops, going to see " John Watts, Operator."

Abstracts of English and Foreign Journals.

INDEPENDENT PRACTITIONER.

"FERMENTATION IN THE HUMAN MOUTH; ITS RELATION TO CARIES IN THE TEETH," by Dr. D. Miller, Berlin.

Dr. Miller has contributed a series of highly interesting papers upon this subject. In view of the extreme importance and originality of Dr. Miller's researches, we have deemed it most conducive to the benefit of our readers that his views should be collected together and presented more at length than is usual in our abstracts.

Dr. Miller believes that "the first stage of dental caries consists in the decalcification of the tissue of the teeth by acids, which are for the greater part generated in the mouth by fermentation." It remains to discover what this ferment is, and what are the conditions essential to its action.

The apparatus employed was:

1.—A double-walled incubator (hatching chamber) with regulating gas supply.

2.—A Koch's Sterilizer, for destroying "germs."

3.—A damp chamber.

4.—A drying oven for rendering instruments, apparatus, &c., free from germs.

5.—A microscope with an oil immersion.

All instruments were duly freed from germs by passing them through a Bunsen flame.

Infections from carions dentine were thus made.

The cavity of a freshly carious tooth is cleared of food, and carefully brushed over with a pledget of cotton dipped in carbolic acid (90 per cent.).

The acid is absorbed by some bibulous paper, and layer after layer of the soft dentine removed; the deeper layers being reached, a minute portion of the clean soft dentine is brought into the culture medium.

Infections from the mouth were made by scratching upon the surface of the mucous membrane of the cheek, or the margin of the gum, with the end of a clean platinum wire, and then dipping it into the culture medium. The materials used for culture were:

No. 1.	Sterilized saliva	50,0
	Sugar	1,0
	Starch	0,5
No. 2.	Sterilized Milk.	
No. 3.	Decoction of Malt	50,0
	Sugar	1,0

The malt decoction is made by boiling, with slight evaporation, 20,0 dry malt with 120,0 water for ten minutes, and filtering.

No. 4.	Sterilized saliva	50,0
	Water	50,0
	Starch	20,0
	Sugar	2,0

The starch is added to the cold solution of water and saliva, and well stirred; it is then poured into shallow glass vessels with glass covers, and put into the sterilizer; it there forms a solid mass, upon the surface of which the infections may be made. It possesses all the advantages of gelatine, with one great additional one, in that it does not liquify at blood temperature.

No. 5.	Decoction of malt	100,0
	Sugar	2,0
	Starch	20,0

Prepared in the same way as No. 4.

No. 6.	Beef extract	2,0
	Water	100,0
No. 7.	Water	100,0
	Beef extract	2,0
	Sugar	2,0

No. 8. Fresh baked potato, cut into slices one half inch thick, with a clean knife.

Other substances were used. The sugar must be fermentable. Where small quantities of any culture material were used, the cultures were kept in the damp chamber to prevent their drying up or becoming too concentrated by evaporation. All cultures were made at a temperature of 36°—38°C.

Exp. 1. Shows fresh saliva mixed with sugar or starch, one to forty, if kept at blood temperature. It invariably becomes acid in four to five hours.

Exp. 2. To test the actual process in the mouth, a glass tube two c. m. long and three m. m. wide, is filled with starch, sterilized, and fastened to a molar tooth in the mouth on going to bed; next morning the contents of the tube will have a strong acid reaction. A cavity in a tooth, or a piece of linen, which may be saturated with a solution of starch, will answer the purpose as well as the glass tube.

Exp. 3. The mixture of saliva with starch or sugar, is kept for a half-hour in the sterilizer at one hundred degrees Centigrade, and then placed in the incubator; it does not become sour at all. We conclude that the ferment is rendered inactive by a temperature of one hundred degrees Centigrade.

Exp. 4. The starch is heated to one hundred and fifty degrees Centigrade before mixing with the saliva; the solution still becomes sour. Conclusion: the ferment exists, not in the starch, but in the saliva.

JOURNAL OF BRITISH DENTAL ASSOCIATION.

Dental Caries, a Critical Summary,

By Henry Sewill, M.R.C.S. and L.D.S., Eng.

(*Continued from p.* 557.)

Underwood, Milles & Miller have investigated the subject chiefly by microscopic work. They have shown that with an $\frac{1}{8}$th objective we can see micro-organisms inside the canals, their numbers varying as the tissue has been disintegrated. The presence of these organisms is invariable. They penetrate as deeply as the disease has gone. Artificial decalcification of teeth by means of acids does not give rise to organisms, nor is the process at all similar to that of dental caries. Teeth exposed to acids or saliva freed from all septic infection will remain free from caries for years. Mr. Sewill believes that the pigment found associated with caries is due to pigment forming bacteria. Mr. Underwood has succeeded in obtaining this pigmentation by bacteria culture methods.

The microscopic appearances of carious dentine are thus described. "The tubes are filled with micro-organisms" this is demonstrable by methyl violet or aniline staining.

"They appear to penetrate the canals at first in single file and then accumulating in vast numbers to encroach upon the matrix until the canals are so enlarged that two adjacent often amalgamate and form one irregular tube full of organisms and can be seen in branches of the tubes; and the microscope discovers here and there a narrow line of bacteria or micrococci penetrating beyond the sphere of visible decay." Disintegrated tissue and foreign particles with masses of a fungus like growth, leptothrix buccalis are formed in the field of the microscope. Certain changes it is said take place in the dentine before disintegration occurs. Around a cavity the dentine takes on a translucent aspect—this was erroneously held by Magitot to indicate a vital reaction.

Messrs. Underwood and Milles' are quoted as having failed to obtain caries in extracted teeth by artificial means—a failure they believe to be due to the impossibility of exactly reproducing the conditions present in the mouth.

Extracted teeth retained in the mouth as artificical substitutes are said to be liable to true caries.

Mr. Charles Tomes, it is stated, believes that the bacteria are found beyond the area of disintegrated tissue, and that they play a necessary rôle in the process of dental caries but what that rôle is, remains to be discovered,

The explanation of the stages in the process of dental caries is stated to be probably, the enamel is perforated by acid, possibly a fissure or flaw giving admission. The dentine being reached, the organisms feed on the fibrils. They in their life processes originate acid, which further dissolves out the lime salts.

Thus it may be said (1) the anatomical characters of enamel and dentine preclude these tissues for initiating or sustaining any pathological process; (2), the appearances in carious dental tissues are all interpretable as resulting from disintegration without vital reaction; and (3), that the caries of dead teeth in the mouth is identical with the disease in living teeth.

The acids which commence the process, are derived from the decomposition of food retained in the mouth, from secretion of the mucous membrane, are (abnormally) acid salvia.

The predisposing causes of this disease are (1), structural defects in teeth, due to variations in the quantity or quality of the dental tissues.

These defects, such as minute cracks, varying degrees of hardness of enamel, &c., are then carefully described. It is a matter of dispute how the innate structural defects originate —development through hereditary disease as in syphilis, struma explains some cases, although Mr. Sewill does not think the teeth are reliable as a sign of congenital syphilis. Civilization by lessening the use of forcible jaw movements has caused deter ioration of the teeth. Again, the same cause gives us small maxillœ which give rise to overcrowding and so malformation of the teeth. Anomalies in the secretions of the mouth are a further and prolific factor in promoting dental caries. The conditions causing dyspepsia, such as gout, alcoholism, and many more, as well as the congestion of the gums which they originate depreciate the buccal secretions. Hence it is that dental caries is found to occur where these conditions exist.

(*To be concluded.*)

NEW ENGLAND JOURNAL OF DENTISTRY.

"Granulated Bone as an article of Dental Hygiene;" by H. E. Dennett, D.D.S., Boston, Mass.

Dentists and Physicians are asked "What shall I do to preserve my teeth?" and to this question our author applies himself. He institutes a comparison between the diet of the civilised man of to-day and of the savage. Among animals, as among savages, he finds wisdom rules at least as far as she takes care of the teeth. The fœtal gums become tenanted with teeth germs in the 7th week, and from this time they require a free proportion of lime in their pabulum. Dr. Dennett finds all savages and all carnivores consume bone with their meat, the civilised man does not gnaw, and hence he suffers from dental caries. Many ailments among cattle are remedied by "bone meal" but man—at least, in his civilised condition refuses to eat bone under any shape or form, and hence suffers. In conclusion, the consumption of properly prepared bone as an article of diet is insisted upon.

Literary Notices and Selections.

TRISMUS NASCENTIUM; OR, THE LOCKJAW OF INFANTS.

ITS HISTORY, CAUSE, PREVENTION, AND CURE.

Illustrated by Cases and Post-mortem Examinations, with Statistical Table of Two Hundred and Twenty-nine Deaths.

By J. F. HARTIGAN, M.D., of Washington, D.C.

(*Continued from page* 563.)

To better understand the pathology and rationale of the production of the disease, it will be remembered that the child's head before birth has for its pillow the soft cushion of the liquor amnü. At birth, and for some time subsequently, the cranial bones are not united, are thin and without diploë. It is reasonable to suppose that the transition to a different usage will cause them to be easily displaced, or the occiput to be depressed, the degree and character depending upon position or management. The mother may allow the head to lie on her arm or lap during nursing, or the nurse may place it in a like position, or the child may be retained in the recumbent posture on a hard mattress, an old quilt, or a bunch of clothes, as Dr. Sims says, wadded up and stuck under the occiput. And here I may be permitted in illustration to offer a characteristic extract from one of Dr. Sim's cases.

"The mother said that there had always been great difficulty in getting the child to suck; that sometimes it could not draw the breast at all; and very often would stop before it got half through; and that this had been the case from the time it was a week old. I requested her to suckle it (it was now quiet; had been for some time lying on its side). She took it up from the bed and applied it to the breast. In doing this, the occiput fell precisely against her arm, as it supported the head: there was a difficulty in the child's laying hold of the nipple, and she attempted to force it into the mouth by pressing this firmly up against the breast. This plainly increased the difficulty, for the pressure of the child up to the breast, by the arm supporting the head, and acting upon the occiput behind, evidently produced a deeper displacement of his bone, and so every effort on the part of the mother, while she thus held the child, only aggravated the trouble.

"Seeing that there was no chance for it to suck in this way, I requested the mother to take her arm from under its head, while I would support it in my hands, gently and firmly compressing the parietal protuberances for five or six minutes, but with no pressure on the occiput; and it sucked with the greatest ease; indeed most ravenously. I then changed the pressure from the parietal to the occipital bone, and instantly the same difficulties occurred as when the head was resting on the mother's arm."

Another fruitful cause, especially of the chronic form of the disease, is the modern baby-carriage. A child is laid in this deep, narrow, coffin-like contrivance, pillow crosswise. The body as well as the head sinks in the middle; the child has no room to turn, and if it could, it would be in imminent danger of smothering from the raised pillow on either side. Arriving home after its jolting and head-jarring expedition, panting and fretful perhaps, it only needs a little improper handling (if the bones are not already dislocated) to inaugurate the disease; refusal of breast follows, then convulsions; a physician arrives, but the cause is not recognized; all sorts of remedies are employed; twitchings, convulsions, and other symptons continue; finally, from overloading, the delicate blood-vessels give way, or more generally death is caused by an exhaustive diarrhœa. This is no fancy sketch, but an every-day occurrence. I can recall numerous instances, before this subject attracted my attention, that I know now could have been saved by position, when the death certificate recorded "tabes mesenterica," "meningitis," or "cholera infantum." Who cannot recall similar cases, where the little one was perpetually dosed, the symptoms persisting despite everything that could be done, or where perhaps they were relieved, and as the physician supposed, by the potency of the prescription, when probably it resulted from an *accidental proper position,* or after removal from a bath? Dr. Z. T. Sowers, of this city, and Dr. Luck, of Roanoke, Va., inform me that they have many such cases. A brother-in-law residing in the latter place, an intelligent, but not a medical man, wrote me a few months ago: "I really think if we had our attention called to the subject, that M.'s infant would have fallen a victim thereto. For several days it had many of the symptoms you describe, but the simple means indicated were apparently effective." In a conversation with Dr. John B. Hamilton, Surgeon-General Marine Hospital Service, he said, that when practising in Kane, Greene Co., Ills., in 1872, a child about two years old, of Elias Greene, living in the neighbourhood, had convulsions, which had continued at frequent intervals since birth, produced, it was thought, by deficient ossification of the cranial bones. Dr. A. B. Allen, who attended the case, placed a *tight bandage around the child's head, and the convulsions,* *in a few months, entirely ceased,* the bones having become consolidated. Dr. Hamilton's statement was dependent upon the history as given him by Dr. Allen , but it was of common repute that the child was cured by the treatment, Dr. H. himself having attended other members of the family.

Of the many instances that I have lately seen in the insipient stages of the disease, all of which it may be said were controlled, one particularly occurs to my mind, where the mother, after allowing the child's occiput to rest on her arm all night, noticed next morning, among other symptoms, what she called swelling of the feet; this was nothing more than commencing rigidity. The child, plump and healthy, sucked indifferently, threw its head back, all the muscles becoming knotted; it regurgitated half a teaspoonful of water, containing one-twelfth drop tinct. aconite, which the mother insisted produced the spasm that followed. I therefore ordered other "medicine," consisting of chalk and sugar, and remained to see that a *proper position* was carried out. There was no further bad symptom.

Dr. T. N. McLaughlin, now of the Philadelphia Hospital, who gave me valuable assistance in many of these post-mortems, writes me as follows of a case occurring in that institution.

"My attention was called to Mary M., white, æt. 4 days. The mother stated that the child was very restless, refused to nurse, and she was unable to account for the sudden change in its condition. Upon inquiry, I ascertained from the mother that she was in the habit of resting the back of the child's head upon her arm, and of tossing it while lying in this position in order to quiet it. The child presented the following condition: The expression was one of intense distress. There was marked hyperæmia of the conjunctivæ, delirium, and throwing of the head from side to side. It had a few spasmodic contractions of the muscles, but no convulsion; the pulse was rapid and feeble. The cause being recognised, I immediately resorted to your mode of postural treatment, by placing the child upon a pillow, and on its side, so as to relieve the pressure from the over-riding of the occiput. The relief was almost immediate. The child who was so restless before now became quiet. This postural treatment was alone tried in order to test its merit, and I feel confident that the child's life was saved by immediately recognising the cause and removing it."

As before mentioned, in many of the cases examined, I found a reddish gelatinous matter mixed with the coagula enveloping the cord, distributed mostly in the dorsal and lumbar regions. West also refers to its presence around the theca. This may correspond with the viscous mass or proliferation of connective tissue, which, according to Meigs and Pepper, is the constant anatomical lesion found almost exclusively in the gray substance. The condition I have described existed in a lesser degree in an infant that died from asphyxia by being accidentally overlaid.

" In reference to the examination of five spinal cords received from Dr. Hartigan, the following report is respectfully submitted: Four of the specimens were from infants who had died of trismus nascentium, and one from an infant who died of asphyxia.

In the cavity of the arachnoid, more or less surrounding the cord in all the cases, was found a varying quantity of reddish gelatinous lymph. In three of the cases of trismus, abundant coagula were found in the same locality, less defined in the other. In the case of asphyxia, no coagula were found. Microscopical examination of the lymph showed it to be organised, containing abundance of capillary bloodvessels, with evidences of congestion observed in microscopic extravasations as well as turgescence of the larger vessels. This condition was found in the case of asphyxia as well as in the cases of trismus; in all the cases the lymph presenting precisely the same appearances, which are shown in the accompanying photomicrographs. No microscopical examination of the cords was made, but they presented the appearances of congestion."

(To be continued.)

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

By J. William White, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

Continued from page 569.

We have thrown aside as inadmissable the two absolute doctrines which attribute the origin of dental erosions exclusively to eclampsia or to syphilis. It remains for me now to expound and defend a third doctrine—or, if the word appears a little ambitious, a third opinion—to which I have been led by my personal experience, no less than by the works of my predecessors. This opinion, which alone seems to harmonize the clinical facts, may be summed up under three heads in the following manner: First, the dental mal-formations known under the name of erosions are commonplace lesions, susceptible of derivation from diverse and multiple causes; second, syphilis is sometimes and perhaps oftener than any other cause the origin of these conditions; third, from the special point of view which occupies us—that is to say, as symptoms competent to aid in the retrospective diagnosis of hereditary syphilis—dental erosions have a very unequal value, according to the forms which they assume. Some of these forms, resulting with an undeniable frequency from causes foreign to syphilis, have no diagnostic signification; while others, caused almost alone by syphilis, constitute nearly positive signs of specificity. We shall endeavour to justify this triple proposition by as rapid a discussion as possible.

First, dental erosions, we have said, are but commonplace lesions, manifestly derived from multiple and diverse causes. What, then, is dental erosion? It is, very evidently, as acknowledged by all, a lesion of nutrition. We have seen that it results from a temporary interruption in the process of dentification. At a certain stage of its evolution the tooth does not receive the amount of nutritive material necessary for its proper formation. As a consequence, it is viciously and incompletely constituted, at this period; and this arrest of development, this disturbance of nutrition, shows itself on the crown by an atrophic zone which we call erosion. Then, *a priori*, is it possible to admit that syphilis alone has the power of inducing a nutritive disturbance in the dental system? On the contrary, is it not probable that a lesion of this kind, without specific character, may originate from any morbid cause giving rise to a profound disturbance of the general nutrition? *A posteriori*, it follows that dental erosion arises from multiple causes, since we meet with it in divers conditions—that is to say, for example, in patients who have not had syphilis, as in patients free from eclamptic antecedents. It follows that the cases which are explained neither by syphilis nor by eclampsia should be explained by other morbid influences.

Without doubt science is still far from being settled upon the etiology of dental erosions, but numerous causes to which they have been attributed, such as eruptive fevers, pyrexiæ, scrofula, rickets, etc., are absolutely inadmissable in many cases in which they have been cited; for the reason that the teeth were already definitely formed, and consequently not susceptible of malformation at the time when these causes *could have had any effect*.* Some carefully observed facts attest, however, in a very definite manner the etiological connection of certain morbid conditions with the erosion. Thus, M. Magitot has related an interesting observation of dental erosions caused by a chronic enteritis. In this case, the incisors, the cuspids, and the first molars were in a state of complete disorganization, as in the form called "honeycomb." There the seat and the extent of these lesions offered a precise connection with the invasion and the long duration of the enteritis, which, having begun in the second month, was prolonged to the second year. The second and third molars, the evolution of which, as we know, occurs after the second year, presented no alteration whatever.* Likewise, M. Pietkiewicz observed the following fact, which he has been kind enough to communicate to me. A young man of nineteen presented himself to him affected with numerous dental erosions. From the seat and the extent of these erosions, our skilful confrère decided that the morbid cause from which they sprung should have occurred at the age of from eighteen months to two years. He looked upon this case, and learned that at the age of eighteen months his patient fell from a first storey; that he suffered from several wounds in consequence of this fall, and that on account of this he was compelled to remain in bed several months in a most serious condition.† It is useless to further insist on this point which is accepted by the great majority of physicians.

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* This M. Parrot has authoritatively demonstrated (*Le Progrès Médical*, 1881), so that I have had nothing to add or modify.

Let us consider the second point. The pathogenic relation of dental erosion with syphilis springs from numerous considerations, of which it will suffice to cite the principal ones, viz.: First, frequent verification of previous attacks of syphilis in the parents of patients with dental erosions. We could borrow examples by the hundred from Hutchinson, from M. Parrot, and from others who have occupied themselves with this question, without reference to about one hundred and thirty cases from my personal notes. These observations must be thus summarized: Patient effected with dental erosions; on this account syphilitic heredity suspected; interrogation of the parents, who acknowledge syphilis previous to the birth of their child. Example—a child of a dozen years is sent to me by one of my colleagues, on account of an ulcerative lesion of the vellum, which I diagnose to be a gumma. I examine the teeth, and find the erosions of such a nature as to confirm my suspicions. I then question the father of the little patient and learn from him: First, that he had syphilis a short time previous to his marriage, and that he was incompletely treated for it. Second, that he had the misfortune to communicate syphilis to his wife in the early period of his marriage. Third, that the first-born child died of syphilis. Fourth, that his second child (the one I am consulted about) had in his early months divers symptoms which were considered to be syphilitic, and were treated and cured as such, etc. Facts of this kind abound—they are innumerable.

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* Clinical Studies on the Erosion of the Teeth, p. 6.

† Unpublished observations.

We frequently discover in patients affected with dental erosions either syphilitic antecedents, or actual symptoms of syphilis. Examine a certain number of persons affected with dental erosions, and you will recognize—not upon all, but upon the majority—evidences of syphilitic heredity. You will be duly enlightened as to some of them by an exact clinical history. Among others, you will find the manifest remains of specific symptoms—cutaneous cicatrices, cicatrices of the mucous membranes, corneal opacities, perforation of the velum, nasal flattening, cranial protuberances, lesions of the long bones, etc. Finally, in others, as in the cases before mentioned, you will be enlightened at once by the actual existence of undoubted syphilitic lesions. Of this kind, the examples are likewise very numerous. The three following cases, taken at random, will answer as specimens. In an observation of Coupland, a young girl of 13 years, presenting dental malformations and corneal opacities, was attacked with visceral symptoms, to which she succumbed. The autopsy showed, among other lesions, hepatic gummata.* Archambault relates the case of a child born of a syphilitic mother, who was affected, at about the age of three months, with typical secondary symptoms, and later presented an absolutely vicious second dentition—serrated erosions, vertical flutings, etc.; and at 12 years of age, had exostis of the tibia and of the metatarses.† Cheadle reports a case of dental malformations in a girl of eight years, with other syphilitic manifestations, viz., keratitis, nasal lesions, necrosis of the palate, rupia, facial tubercles, tibial nodes, parietal periostosis, etc.‡ Such facts, joined with many other similiar ones which I could cite, are demonstrative.

(To be continued.)

**Medical Times*, 1880.

†*Union Médicale*, Jan. 21, 1879, p. 93.

‡*Brit. Med. Jour.*, 1880, p. 204.

The question of dental education is very much upon the surface in America; hardly any periodical can be taken up without finding one or more articles or lectures upon the subject. Our brethren are not apt at ventilating a subject unless they intend working at it; we may expect the coming American dentist to be even more a master of his art than the giant of to-day.

Dental News.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

DISCUSSION UPON MR. UNDERWOOD'S PAPER ON INFLUENCE OF MICRO-ORGANISM.

Mr. W. J. Milles said he had only a few words to add bearing on the subject of the pure cultivation of micro-organisms. By "pure cultivation" we mean the inoculation of the contents of a purified flask with a special form of micro-organism. The flasks contain solidified blood serum purified after Koch's method by heating it to a certain temperature. Certain precautions are taken, such as purifying the needle by passing it through the flame of a spirit lamp, &c. The cotton-wool cap is then removed from the flasks, and the surface of the fibrine is inoculated with a small portion of carious dentine taken up on the point of the needle. From the point thus inoculated the organisms grow, and in some instances we have obtained pure cultivations, that is, we were able to separate the species, and to ascertain that these organisms breed true. For instance, we inoculate a micrococcus into a sterilised flask, and we find that it reproduces the same speices; and if we inoculate a series of flasks from this one, we get the same result. By this means we were able to separate certain of these micro-organisms,—micrococci, bacteria, and certain spirilli and bacilli.

Having thus separated the organisms, we tried to advance a step further. We hoped to be able to discover the special form of organism which produces caries, but unfortunately with negative results. Having allowed the organisms to grow to a considerable extent in the flasks,—here is one which you see has become absolutely opaque with organisms,—we boiled a healthy tooth for a certain time, and then dropped it into a tube containing some special form of organisms,—say, one containing nothing but micrococci,—and we left it there for several weeks, and, in some cases, months, exposed to the action of the organisms, maintaining during the time a moderate elevation of temperature, but, as I have said, no change whatever occurred. The probable explanation is that which Mr. Underwood has given, viz., that some of the conditions necessary for the production of caries, which exist in the mouth, were absent from our experiments. I have no further remarks to make at present, but if anyone likes to ask any questions later as to the incubation of these flasks, or any of our other experiments, I shall be very pleased to give any information I can.

The President remarked that micro-organisms seemed to be assuming an important position, not only in dental but also in general pathology. As regarded the part they played in the production of caries, the inquiry seemed to have a certain fascination about it which he had no doubt had been felt by many of the members present, and he hoped that some of them would favour the meeting with an explanation of their views on this important question.

Mr. Henry Sewill said he must in the first place assure Mr. Arthur Underwood of the high opinion he had of the work which had been done by him and his colleague. He regretted to say that he did not himself belong to the remnant of the Society which could lay any claim to a scientific position; but so long as the Society possessed a remnant like Mr. Underwood and others, whose names they were all proud of, its reputation would continue high.

He thought that there were strong *à priori* grounds for acquiescing in the correctness of the views which Mr. Underwood had put forth. They explained one or two points which were previously not very clear, viz., why the dentine was more rapidly destroyed than the enamel, owing to the organisms multiplying in the tubes of the dentine. It was evident also that if Mr. Underwood's views were correct, they effectually disposed of all the theories based upon inflammatory processes in the dentine, the existence of vital force, and other hypotheses which he believed to be entirely false and misleading. He had himself long held and affirmed that dental caries consisted essentially of disentegration of the enamel and dentine due entirely to the action of external agents that the enamel and dentine were perfectly passive during the process, and manifested no pathological action, and no so-called vital phenomena. He thought that the truth of this statement was amply proved, first, by the fact that from our knowledge of the anatomy of enamel and dentine it was impossible to conceive that enamel, and scarcely less possible to conccive that dentine, could be the seat of anything like pathological action. Secondly, there was the fact that caries might occur in natural teeth inserted in artificial dentures, and even in hippopotamus ivory when worn in the mouth.

The *predisposing* causes of caries were, first, innate structural defects in the enamel and dentine; secondly, overcrowding and irregularity, which acted by favouring the lodgment of food between the teeth for prolonged periods, and the formation of the products of decomposition; and, lastly vitiated secretions in the mouth. The *exciting* cause of caries was acid in some form or other.

The authors of the paper had shown clearly that the disintegration which takes place in a carious cavity could not go on without the presence of organisms, but though it was no doubt important to ascertain the nature of the minute changes which took place in the tissues whilst undergoing disintegration, he did not regard these as of supreme importance. The important point was to disprove the various false views of the nature of caries which had been put forth from time to time. To these Mr. Underwood's investigations had helped to give a finishing blow, though he considered they could be clearly disproved without their aid.

Dr. St. George Elliott said that, being tolerably familiar with the writings of Dr. Miller, he should like to point out the chief discrepancies between the facts therein spoken of, and those which they had heard brought forward that evening. There was, in the first place, the zone of softened uninfected dentine which Dr. Miller described as existing between the part invaded by micro-organisms and the limit of the hard portion of the dentine. He thought this zone had been originally noticed by Mr. Tomes. Mr. Underwood denied its existence, and had been very explicit on that point. To outsiders it became simply a question as to which was right, and probably a few additional observations would decide the point.

Then Dr. Miller stated positively that he could produce artificially, under septic conditions, out of the mouth, caries so closely resembling that which occurs in the mouth, that he had submitted a large number of slides, some bearing the artificial and others the natural product, to microscopists in different parts of the world, and defied them to tell the one from the other. Mr. Underwood had said that he had repeated these experiments, and had failed to produce caries artificially. Here again came the question, Who was right? A little further experimenting would probably elucidate this matter also.

Again, Dr. Miller said the questions brought before the Society in Mr. Underwood's paper, even though the lines of the paper were strictly adhered to, would require for their full discussion a much greater amount of time than was usually allotted to discussion at the Society's meetings. There was, however, one point referred to by Mr. Underwood which he thought was worthy of comment, if only for the sake of emphasizing and calling attention to it, viz., the fact that many of these micro-organisms, when cultivated under conditions which they do not like, become stunted, as it were; just as was the case with a plant when grown under unfavourable conditions. And he thought it very probable indeed that the failure of Messrs. Underwood and Milles' artificial caries experiments was due to this cause, to their being unable to give the micro-organisms just the conditions which suited them. In conversation with Mr. Underwood he had repeatedly told him that he should be extremely surprised if he ever did succeed in producing caries out of the mouth, seeing that the conditions under which it occurred in the mouth were so manifold.

(To be continued.)

ODONTO-CHIRURGICAL SOCIETY.

(Continued from page 259).

Mr. Campbell, Dundee, said he was sure they were all at one in their heartfelt sympathy with Mr. Macleod and Dr. Ronaldson in this sad calamity which had overtaken them in their practice. It was so far fortunate, he thought, that the patient was a child. Had it been either the father or the mother of the boy, it would have been much more calamitous. They did not know how soon such a misfortune might happen to any of them. That such a sad termination to a case might never befall any other member of the Society he was sure was the devout wish of all. With reference to what Dr. Ronaldson had said regarding a probable cause of death, as arising from shock, he would remark that it seemed to him from his experience in operation with anæsthetics, and his observations in regard to cases in which there had been fatal results, that the patient had felt the latter part of the operation, and shock to the heart followed. They knew that chloroform had more or less a depressing action on the heart, and that shock under its influence was more likely to be fatal than with nitrous oxide gas, which stimulated rather than depressed the heart's action. He sympathised with the operator in the present case, as any of them might have done exactly as he did, viz., extract the last tooth when there were symptoms of returning consciousness, rather than stop to administer more chloroform. However, he did not think it wise to do so. His practice was to stop operating on the slightest return of consciousness, and wait until the patient was over again. One is naturally anxious to get the operation quickly over, more especially when bleeding is copious and there is fear of the blood getting into the larynx, causing suffocation. He marvelled, however, that even with copious bleeding, there was so little cause for anxiety in this direction. He thought there was one practical lesson to be learned from this and similar cases, and that was, to stop operating upon a patient under the influence of chloroform if there was the slightest sign of returning consciousness. He was of opinion that shock under nitrous oxide gas was much less serious than under chloroform, and comparing one anæsthetic with another, he was decidedly in favour of the former, when at all admissible. When several teeth had to be extracted, he was in the habit of using ether in combination with the gas. He placed a small quantity of the ether in the supplemental bag, and opened the cock about the eighth or ninth inspiration, when the patient was beginning to lose consciousness. In this way he obtained more prolonged anæsthesia, and more could be done than with the gas alone. Certainly for the removal of three or four teeth he should recommend the use of the nitrous oxide. He would rather administer it a second or third time, than run the risk incident to chloroform. He had given it several times in succession without troublesome results. He thought they were much indebeted to Mr. Macleod and Dr. Ronaldson for bringing this case before the Society. It was well, he thought, that it had fallen on the shoulders of two strong men; had it happened in the hands of timid nervous men it would have caused them much needless anxiety.

Mr. Stirling agreed with the remarks that had been made by the previous speakers, who said that in the case referred to, death had been caused by shock while the heart was in a weak condition, due to the administration of the chloroform. Mr. Campbell had said that they should leave off operating when they saw signs of returning consciousness, which was very true; but when they saw these signs it might even then be too late to prevent shock. He had seen a good many practitioners with different methods; and he thought that by holding the napkin very close on the patient they got the best results. Unconsciousness was obtained before the heart was weakened by the action of the chloroform, and the patient went away after the operation in a better state than when it was given slowly. That was what he had seen. His average was 60 or 70 chloroform cases a year, and a little more of gas. As to giving the gas two or three times and repeating the operation, he did not quite agree with that. In the case of the gas not being successful, chloroform should be applied. He thought it was better to have an operation performed at one time, and to be done with it than to repeat it.

Mr. Finlayson said there was one question that came up, viz.—as to the toxic character of chloroform. Had it ever been found in the experience of any gentlemen present that chloroform had caused death before any operation?

The President said he had seen it occur several times in the case of the lower animals.

Dr. Smith said that persons had committed suicide by means of chloroform. One of the earliest cases on record was that of a druggist's assistant, who poured a quantity on a towel, and was found lying on the towel across the counter, dead.

The President asked if that was not a case of asphyxia?

Dr. Smith thought not, as there were deaths of patients using chloroform where asphyxia could not be blamed.

Dr. Ronaldson said he knew one case in a patient who used it for asthma.

Mr. Crombie said he knew a young lady who took chloroform for toothache. On one occasion she had saturated a napkin with it, and she fell into the fire.

Dr. Smith suspected that the nitrous oxide did not in every case excite the heart's action. One case had caused him some anxiety. It was that of a now well known medical man in Edinburgh. He and his assistant kept up respiration for two hours, in fact, till he thought the patient dead, but his old assistant, Runciman, went on and the sufferer came round. However, he had since found that that gentleman had become subject to fainting fits. There might be something due to the condition of the heart.

Mr. Campbell said he did not think that recovery would have been obtained in that case if chloroform had been used.

Dr. Williamson, Aberdeen, thought they were much indebted to Mr. Macleod for his paper, and for the account of the fatal case he had been so unfortunate to meet with. It was well that such cases should be duly recorded, as a constant repetition of successful ones was apt to make one think less of the possibility of accident. The present case was evidently produced by shock. Dr. Smith had cited cases to prove that death would have been supposed to be caused by chloroform, if that drug had been given, but it certainly might be said that in these cases death might have been averted by the use of the anæsthetic, the depression produced by the shock of the operation being greater than that produced by chloroform. In his own practice he avoided chloroform as much as possible, giving it not much oftener than once a year, and much preferred gas, not infrequently giving it several times when necessary, and at intervals. Towards the front of the mouth, one could remove from six to nine or ten roots at one time. Of course every now and again, cases occured where chloroform or ether were absolutely necessary, as, for example, with nervous children not sufficiently under control to take gas, or where there was unusual difficulty in the operation. Looking at a table of deaths from chloroform, it would be seen that the great majority of cases occurred where it had been given for the extraction of teeth, and he thought that that was a primary reason why it should be used as seldom as possible. He had expected Mr. Macleod to have said something about ethidene-dichloride, which he had used in conjunction with gas by putting a little on a sponge at the mouth of the supplemental bag. He observed that Mr. Quinby in his recent book, states that he had used it by itself for the last two years and had found that it acted well with children, the anæsthesia being prolonged enough for most dental operations, and that it was not so powerful an agent as chloroform or ether.

Mr. John A. Biggs said that none of the speakers had mentioned the plan of adminstering a small glass of brandy before giving chloroform. He knew that in a great many cases that had been done with great success. The first time his attention was called to it was about ten years ago. The patient was given a very small dose of brandy before the administration of chloroform, and he was very much struck with the rapidity with which she become anasthetised. He had his attention directed to the case, and with very marked results. He thought that the reason for the brandy having that effect was that the nervous fear that was induced previous to the operation was often thrown off by the stimulant. It enabled the patient to take the chloroform, and also sustained the heart. He had seen chloroform very frequently administered, and for years frequently administered it himself, when he was with Dr. Smith. The variety of ways in which it was given by different persons was curious. In one case that came to him in Glasgow, the doctor brought the patient, who had a number of bad teeth. Immediately on coming in the doctor undid his case of chloroform, and applied it in so energetic a manner, that he could assure them he never got a greater fright in his life. On the other hand he had seen men put a drop of chloroform on a napkin, and allow it to remain till it was blown away, and thus waste a good deal of time. Nervous fear was communicated to the patient, and that he believed conduced in a great measure to give the patient a shock. He thought also that men who had nervousness in giving chloroform where the last who should give it, and that to administer it freely was the safest way. He wished to take that opportunity of condoling with Mr. Macleod and Dr. Ronaldson in the painful case to which reference had been made.

(To be continued.)

A Conversazione will be held on Monday, July 14th, at the Dental Hospital, Leicester Square, by the Students' Society of the Dental Hospital of London (C. Truman, Esq., M.A., President.

Gentlemen who have not received cards of invitation, and who wish to be present, are requested to send their names to the secretaries,

F. Newland Ridley, } *Hon. Secs.*
R. W. Stainer, }

VACANCY.

Victoria Dental Hospital, Manchester.—Two Honorary Dental Surgeons. Application to be sent to Fred. E. Burnley, Honorary Secretary, 98, Grosvenor Street, Manchester, before July 12th.

APPOINTMENT.

R. D. Pedley, M.R.C.S., L.D.S., has been sppointed Dental Surgeon to the South London Medical Aid Society.

Correspondence.

[We do not hold ourselves responsible for the opinions expressed by our Correspondents.]

To the Editor of the "British Journal of Dental Science."

Dear Sir,—I will not answer any of the issues raised by "Digit," in answer to my letter of May the 15th, for they are one and all beside the questions intended to be discussed.

I am sorry to learn from the tone of his letter that the old illiberal spirit has not quite died out of the profession. Had I thought it necessary, I might have sheltered myself under the wings of Drs. Foster Flagg, Chase, and others of the "New Departure" school, but I merely wished to start a controversy from which useful ideas might have sprung. What I wrote about has been for a long time a vexed question, and I must have put things in a very new light, for "Digit" has been in such a hurry to annihilate me, that he has even forgotten to be courteous.

I am, yours faithfully,

June 18th, 1884. Utility.

PAPERS RECEIVED.

Independent Practitioner; British Medical Journal; Dental Luminary; Zahntechnische Reform (May); Zahntechnische Reform (June); Pharmaceutical Journal; L'Odontologie: L'Art Dentaire; Revue Odontologique; Ohio State Journal (June); Items of Interest; Journal of British Dental Association; Dental Record; Dental Cosmos; Progres Denteire; Deutsche Monattschrift fur Zahnkeil kunde; Independent Practitioner.

British Journal of Dental Science.

No. 396. LONDON JULY 15, 1884. Vol. XXVII.

ACTION OF ARSENIOUS ACID UPON DENTINAL AND PULP TISSUE.

By C. F. W. Bodecker.[*]

The action of arsenious acid upon the dental tissues has for a long time been a disputed question, and the changes effected by the poison when applied to the cavity of a tooth were thought to be confined to the pulp-tissue; although Dr. Clowes, of New York City, showed, several years ago, that an application of arsenious acid to the dentine of a tooth far from the pulp, would lead to the same result as if the agent was placed directly upon the organ, the only difference being that its action in the former instance was not so rapid.

In 1879, Dr. A. Witzel, of Germany, published an extensive work on the diseases of the dental pulp. In this he claims that a pulp, if not too much inflamed, can be treated with arsenious acid, its coronal portion amputated, and the remaining pulp-stump preserved. This doctrine has created a great deal of controversy in this country, although in Germany it seems to have been almost universally accepted. I have followed this line of treatment in sixteen cases, in an experimental way, selecting teeth which I was able to examine from time to time. I should not have used this method in so many cases, had not the first experiment misled me in such a manner that at the present time I am unable to explain it.

The case was as follows: in November, 1879, a healthy young lady, over eleven years of age, presented herself for the correction of an irregularity. The front teeth of both the upper and lower jaws were overlapping each other, and although the arches were pretty well developed there was not room enough for thirty-two teeth. I therefore decided to remove the sixth year molars as soon as the second molars began to make their appearance. Three of the sixth-year molars were well preserved, but the left lower one was largely decayed, and gave the patient trouble whenever anything sweet or sour entered the cavity; but the pain ceased as soon as the irritant was removed. Pressure in the vicinity of the pulp-chamber produced no pain. All these were signs that the pulp was in a tolerably healthy condition and admirably adapted to an experiment with arsenious acid in the manner described by Witzel. The details of the operation, concisely stated, are as follows: After the cavity has been cleaned of decay, the pulp is exposed and an application of

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[*] Paper read before the American Dental Association.

R.—Acid- carbolic., 1.50 gms.
Tinct. aconiti rad., } *aa*, 0 50 gms
Aquæ menth. pip., }
Glycerinæ, 0.20 gms.
Acid.tannic, 0.30 gms.
Ol.menth.pip.,
Ol.caryophylli, *aa*, gtt.xxv.—M.

is made for about five minutes, the arsenious acid paste is laid directly upon the pulp, and the cavity is hermetically sealed. After twenty-four hours the temporary plug is removed, a sharp new bur which has been disinfected is put into the engine, and with a few quick revolutions of the bur the coronal portion of the pulp is amputated. The pulp-chamber is then syringed with a five per cent. solution of carbolic acid in water until the bleeding has ceased, when, the cavity is dried, the pulp-stumps touched with the carbolic acid and tannin solution mentioned above, then with a carbolized solution of mastic, and still after this with a pulp varnish composed of collodion, gutta-perrcha, aud a little carbolic acid. The pulp-stumps are then capped with carbolic acid cement, the formula of which is as follows:

R.—Acid.carbolic., 0.50 gms.
Alcohol.absolut., 0.20 gms.
Aquæ destillatæ, 4.00 gms.
Glycerinæ, 2.00 gms.—M

To this add an equal volume of the zinc chloride used in oxychloride fillings; and to a sufficient quantity of this mixture add oxide of zinc, and mix to the consistence of thick cream.

Six months after the operation I saw the patient and removed the four teeth mentioned above. On opening the roots of the left lower molar, to my surprise, I found the amputated pulp-stump alive. Without delay they were prepared for the microscope and examined. The nerve-fibres of both these specimens showed nothing abnormal; the connective-tissue of the pulp had retained its myxomatous character, and no sign of a former inflammatory process was observable, except where the pulp had been cut in the amputation.

This result induced me to try the same procedure in fifteen other cases, although microscopical examination of pulps treated with arsenious acid and extirpated with the broach had given evidence of the destruction of the medullated nerve-fibres as far down as the apical portion of the pulp. These pulps, however, without exception, had been removed on account of pulpitis, and I was, therefore, unable to determine whether the degeneration of the nerve fibres was the result of the application of arsenious acid, or of a preceding inflammatory process.

The results obtained from the other experiments I made with Witzel's method of amputations, were, however, not so encouraging as in the case mentioned above. I have seen eleven of the remaining fifteen cases experimented upon since last October, but the pulp stumps in every one of them had died, although the external appearance of the teeth was perfect.

The above-mentioned facts make it evident, therefore, that the minute microscopical examination of the changes effected by arsenious acid is to us of the greatest importance. They can best be studied in healthy or superficially decayed teeth of human subjects, or in the teeth of such animals as can be easily experimented upon. In all cases, therefore, a mode of procedure must be chosen, and the line of study is necessarily experimental, and should extend over a long period of time, calling for no inconsiderable amount of labor and painstaking care. Let this, therefore, be my excuse for communicating only a portion of the result obtained, which I shall take care to enlarge and detail at the earliest possible time. From my opening remarks and your own experience, you will know how important, practically, is any knowledge upon this subject. I have hesitation, therefore, in laying before you this fragmentary communication. The arsenious acid preparation which I have used exclusively is the well-known one composed of one part of arsenious acid and one part of sulphate of morphia, made into a paste with chemically pure carbolic acid, which was put into a drill-hole in the tooth and covered with a temporary stopping, such as cotton saturated with sandarac varnish, etc. I will not enter into details, but will only mention that, bearing in mind the the results I wished to obtain, I drilled in the direction of the pulp-chamber, but did not in any case perforate it. It appeared to be quite immaterial, however, how thick was the interposing dentine in respect to the changes caused by the poison.

I used human teeth and those of rabbits. They were extracted in from three to six days after the arsenious acid was applied. The teeth were opened immediately after extraction and immersed without delay in the proper reagent. It is very important to proceed in such manner that the pulp shall not be torn or dislodged, and yet may be acted upon by the fluids while still lodged in its natual position. When the elements of the pulp are once sufficiently fixed then only is it possible to cut (or tease) it without causing a great number of artificial changes. This is the first rule, I may say, which must be strictly adhered to by the student of so delicate an object as is the pulp. This is no easy matter, for unluckily the hardening fluids most generally in use themselves caused considerable changes; even water, and as has been found, the tissue-fluid itself, if allowed to act a sufficient time after death, gives to the medullated nerve-fibres an appearance which I have no doubt has frequently been described as pathological. Should I enter here upon the difficult task of describing the action of reagents, I would take up too much of your valuable time, and I am sure, furthermore, that I would tell many of you what you have known before. I will, therefore, say that after having used different other reagents, I have come to the conclusion that the very best results can be obtained by immersing the tooth in the manner described in a one per cent. solution of hyperosmic acid for from ten to twenty hours, according to the density of the tooth. As regard the pulp, this will be found to be sufficiently hardened after a sojourn of two to three hours in the same fluid; it can then be easily removed from the pulp-chamber without fear of serious harm. Both parts are then placed in distilled water and preserved in alcohol. I have, however, invariably examined the pulp, testing it with great care, as soon as washed, after sufficient hardening in hyperosmic acid. The changes here are truly remarkable. Firstly, if the poison has acted sufficiently long, the whole of the pulp shows to the naked eye, as soon as exposed, all the signs of active inflammation.

I shall not enter into details of the appearance which such pulps present, but shall confine myself to a description of the alterations found in the medullated nerve-fibres. According to the degrees of inflammation resultant from the irritation which the arsenious acid undoubtedly does produce, a greater or less number of nerve-fibres are changed in appearance in such manner that their myelin is separated into larger and smaller masses, between which I have not been able as yet to distinguish either an axis cylinder or an intermediate substance. I may, however, mention that I have seen in nerve fibres which have remained under the influence of the arsenious acid for six days a granular substance which can be colored by rose aniline. When the poison has acted for the last-mentioned period all vestiges of myelin have disappeared and in their stead are found smaller and larger globules, which are stained a deep black by hyperosmic acid. I will not venture to advance an opinion as to the nature of these bodies. Thus much, I. dare say, however, they are certainly a product of the disintegration of the myeline sheath. I have no doubt that this is a stage in the complete destruction of the nerve fibres, and I may mention in this connection that, in one instance, I have found similar globules free in tissue surrounding a number of degenerated nerve-fibres in an incisor of a rabbit after three days' reaction of the arsenious acid.

You will no doubt agree with me that this is far from complete, but you will at the same time be forcibly reminded of similar results found by many histologists after section of peripheral nerves in other parts of the body.

What will be the result of the arsenic so applied, not alone to the pulp itself, but as regards the nutrition and life of the whole tooth, is easily surmised, and can be demonstrated clearly by an examination of the dentine.

After having treated the newly extracted tooth with hyperosmic acid, and thereby guarded against artificial changes, I prepared ground specimens of the same. These were then stained with picro-carmine and suitably treated for mounting in Canada balsam. I purposely abstained from decalcifying these specimens, for, unless this process is watched with great care, the result in most cases will be, to say the least, very problematical. I have found that for the closer study of the dentinal canaliculi and their contents—the Tomes' fibres—all decalcifying agents are out of place.

A superficial view of such specimens shows that hyperosmic acid has been reduced in certain places, whereas others appear colourless. Let me say at once that the former are regions of pathological changes. They start either directly from the place of contact with arsenious acid, and extend varying distances into the dentine, according to the time of the reaction; or, as is evident where they can be traced as far as the pulp, they radiate apparently from the latter and extend toward the periphery. Viewed under the microscope the dentinal canaliculi are very much enlarged, more so at one place than at another, and they appear to be filled with a mass deeply stained in black. The same can be said of the transverse connections of the canaliculi. When, however, high powers (one-tenth of an inch immersion of Grunow, N. Y.] are brought to bear on such places, the black mass is found to be composed of irregularly shaped bodies, which I doubt not are remnants of the dentinal fibre. For, in following up such canaliculi, it can be distinctly seen that the greatly swollen dentine-fibre are broken up more and more as one approaches the seat of the greatest destruction. As a consequence, the basis-substance is very much narrowed in extent as the canaliculi, gain in diameter. Moreover, it appears that the lime-salts are dissolved. I incline to this view because of the peculiarity of colouring, a matter into which I deem it advisable not to enter more fully just at present. I may add that, in such places, when the canaliculi are in transverse view, all these conclusions are fully borne out. So far do I feel justified in entering upon this important subject to-day, although there are many points which I have thought best to lay over or only to touch upon. I am well aware, and should be prepared to hear, that the microscopical changes in the dentine are similar to those found in dental caries. It well that in dental pathology, as in general pathology, due reference should always be made to the clinical aspect of disease, and it is not less than presumption to classify together pathological units, with our present methods of investigation, enormous as has been the progress in this direction of late years. I am, therefore, far from identifying the changes here under consideration with those found in dental caries.

I am also aware that in very many cases, apparently, the effect of arsenious acid has not been so bad as might be expected, but on the other hand, yov may all remember severe cases of local or even constitutional disturbances which could not be traced to any other cause than a dead tooth which had been treated with arsenious acid. Be this as it may, the question is certainly in order, whether, in view of the serious consequences, we are any longer justified in destroying pulps by the use of arsenious acid, and the answer must be that the risk is too great for the gain

THE DENTAL APPARATUS OF THE INHABITANTS OF THE TERRA DEL FUEGO.

By Dr. Galippe.*

The writers were struck with the enormous development of the upper and lower jaws, the measurement of some being given and various specimens shown. The shape of both the superior and inferior maxilla, is quite regular and symmetrical, forming a semi-circular curve. There is not much prognathism amongst the Fuegians, as may be seen from the photographs and plaster casts. It is seldom of the alveolo-dental variety, and depends rather upon the great size of the maxillary arches than upon the slanting implantation of the teeth; these are on the contrary, the larger number of cases, placed perpendicularly to the direction of the axis of the maxilla. The arch of the palate is quite horizontal. The authors lay great stress on the expression of the mouth among the Fuegians, to whom both kissing and smiling are unknown.

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*Resumé of a paper read before Sociéte de la Biologie, by Dr. Galippe and M. Hyades.

The teeth of these people are long and strong, though not very thick at the neck. The size of the canines is in proportion to that of the other teeth. The triturating surface of the molars is large; it seldom presents any supplementary tubercles, and its size decreases from the first to the third molar, which is occasionally quite rudimentary (*atteinte de nauisme*). The result of their observation quite negatives Darwin's views, for on the one hand, he considers that among the higher races, the wisdom tooth is progressively disappearing; and on the other, he looks upon the Fuegians as the lowest types of the human race,—which is not correct.

The physical properties of these teeth were also studied and as a rule their density was found to be greater than that of ours. The Fuegians are a right handed people, and their teeth are more dense on the right side than on the left.

Doctor Hyades and Doctor Galippe, also noticed that the upper milk canine was often retained and that the permanent one grew outside the dental arch.

The Fuegians' teeth are often very much worn down; but this wearing away is of no use whatever in the calculation of their ages, because it is met with both in children and adults. It it due to the way these people use their teeth instead of hand vices, and also in a measure to the hard nature of some of their food. The teeth of some resist, whilst those of others wear away.

The inhabitants of the Terra del Fuego also cut their teeth earlier than we do. Thus the wisdom teeth appear at the age of twelve or thirteen. Dental caries is seldom met with amongst them.

The Fuegians have no notion of any hygienic measures for the mouth or teeth.

OSTÉOMA OF THE LOWER JAW.

By Mn. Trélat of the Hospital Necker, Paris.

The subject of my lecture to-day is a private patient, on whom I operated last month for a very rare kind of tumour.

The child is now eight years and a half old, he is rather delicate and weakly, but does not show any sign of special diathesis and has no personal or hereditary tendency.

The affection had lasted seven months, when I first saw the child six weeks ago. It commenced with tooth ache of so violent a nature as to necessitate the removal of the 2nd molar tooth, at 8½ years, which had however already begun to decay. The swelling of the jaw, which was already of some size, went on increasing after the extraction of the tooth and gradually attained to its present dimensions.

The tumour involved almost the whole of the horizontal branch of the lower jaw, reaching on the one hand to within 14 or 15 millimetres of the middle line, on the other extending half way up the ascending ramus. Its outline was regular, rather more prominent in the middle portion, and moreover, I may add very hard, but not giving rise to any special sensation or crackling, without any elasticity or depression, and without the slightest sign of softening or fluctuation.

The child could open its mouth with the greatest ease. The 2nd permanent molar tooth was not erupted as would be expected from the child's age; the second temporary molar had been extracted and the first permanent one was being cut. There was no deformation or projection of the lower jaw, inside the mouth, to correspond with the tumour on the outside.

What was to be our diagnosis?

Casting aside all thought of a new growth, I wondered whether we might not be dealing with a dental tumour, some form of cyst due to the faulty position or evolution of the second permanent molar, and I thought this would account for most of the phenomena.

Among these tumours, we have the hard and the soft follicular cysts, the fibroid odontomas, with their slow growth extending over two, three, five, seven, or even nine years; besides which we have also the simple cysts of the lower jaw itself, a form of chronic non—dental malady, which affects persons who have arrived at the age of forty, fifty, or sixty There still remained the tumours due to the faulty evolution. of a tooth, the odontomes, first described eleven or twelve years ago by Broca. These tumours sometimes at attain great size, they are always single, they re-act on the lower jaw and

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* Clinical Lecture delivered at the Hospital Necker, Paris.

alter its shape in certain places, so that on palation more or less marked irregularities can be felt on the surface of the bone. I am speaking, of course, only of the radicular odontomas.

After having thus considered a whole series of lesions, I concluded that a surgical operation was absolutely necessary. The tumour would have to be laid bare and opened whether full or hollow; if hollow, its contents would have to be evacuated; if solid, it would have to be removed and if it were impossible to preserve the lower jaw, it would be necessary to resect a portion of it.

I advised the father of my young patient to consult some of my colleagues. He saw Mn. Verneuil, who agreed with me as to the necessity of an operation; and Mn. Gosselin, who diagnosed a sarcoma of the bone and advised the removal of the tumour, followed by the resection of the jaw, should the extirpation of the growth not prove sufficient. I forgot to mention that on his arrival in Paris, the child had been seen by Mn. Peyrot whose diagnosis was: most probably there was a periostosis with a sequestrum in the centre.

On the 19th of last month, I performed the following operation:

I made an incision along the border of the lower jaw, applied a double ligature to the facial artery, and removed a small mass of glands which I may say were perfectly healthy. I now came down upon the tumour, the aspect of which somewhat surprised me I must own. I found a white and hard tissue which proved to be the thickened periosteum (about 2 millimetres thick). And under this, the bone which was quite vascular, and did not give way to the rasp. I now carefully separated the periosteum up to the ascending ramus and also on the horizontal portion of the jaw, and I found the tumour consisted of an osteoma. With a hollow gouge I went on digging and digging into it, always finding newly formed osseous tissue, so that at last I succeeded in removing the whole of the tumour, and I came on to the external surface of the bone.

To sum up, this tumour which formed a projection 25 millimetres high, was altogether made up of newly formed bone covered with thickened periosteum.

The operation was completed by laying the periosteum in its normal position on the maxilla, by the insertion of a drainage tube in the lower angle of the wound, and by the application of an antiseptic dressing. The result of the operation was very favorable, and all that now remains is a slight tumefaction on a level with the seat of the operation.

Cases of subperiosteal osteoma of the lower jaw are exceedingly rare, so much so that Messrs. Gosselin and Verneuil, have never met with a case in the whole course of their surgical careers which have, however, been very long ones. The origin of this tumour can only be ascribed to the irritation of the alveolar periosteum, the result of an affection of the second temporary molar, which necessitated its removal.

About eighteen years ago, I was called by my colleague at the hospital, Mn. Millard, to a wealthy manufacturer, aged somewhere about forty-four or forty-five, who was suffering agonies in the lower jaw. The case was one of small tumour of the inferior maxilla which projected but very slightly. In order to clear up the diagnosis, I removed a small portion of the tumour by means of an exploratory puncture with a hooked trochar. The small fragment of gritty substance was pronounced by Mn. Cornil to be bony tissue. Not being satisfied with this answer, I asked Mn. Verneuil to see the patient with Mn. Millard and myself. We all agreed that an operation was absolutely called for on account of the severe nature of the pains. I therefore removed the right half of the lower jaw, and the patient made a perfect recovery.

Mn. Cornil carefully examined the tumour after its removal and pronounced it to be a bony growth, a sub-periosteal osteoma, but accompanied with exceptional symptoms of extreme gravity *i.e.* excessive pain, the cause of which has always been most difficult to explain.

Why was the osteoma so indolent in the case of the child, and so extremely painful in the adult? I can only put the question without attempting to answer it.

These are the only two cases of the kind I have ever had the opportunity of observing.

THE SURGICAL MECHANICAL TREATMENT OF CLEFT PALATE.*

(Conclued frow p. 604.)

In 1867, Dr. Wilhelm Suersen, of Berlin, described before the Central Association of German Dentists at Hamburg, an instrument upon a new principle and different in shape to anything yet introduced. He recognised the fact that articulation is not a natural process like deglutition or respiration, but an acquired function, when in the absence or inutility of certain muscles their functions may, under favourable circumstances, be taken up by others trained to produce the same results. In ordinary speech the nose is shut off, when necessary, from the pharynogeal cavity by the raising of the soft palate by its intrinsic muscles, and by the coming forward of the posterior wall of the pharynx, due to the contraction of the superior constrictor. It is upon the action of this latter muscle that Dr. Suersen bases his system of obturators. The instrument, which is made throughout of hard rubber, consists of a palate piece covering the hard palate, and a process projecting backwards from its posterior edge and passing through the fissure in the soft palate, terminating about a quarter of an inch in front of the posterior wall of the pharynx. The sides of the process are high, and slope obliquely outwards, so that the edges of the flaps, when raised by the action of the levators, may be kept in contact with them. But the instrument which I pass round will give a better idea of its shape than can any written description.

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* A Paper read before the Students' Society of Dental Hospital of London. May 12th, 1884.

When, for the articulation of any word or letter, the pharyngeal cavity is to be shut off from that of the nose, (and this happens in the pronunciation of the whole alphabet except the letters M and N,) the contraction of the superior constrictor brings the back wall of the pharynx into contact with the broad posterior border of the process, while the flaps of the soft palate are raised in contact with its sides, thus shuting off communication on every side.

Of the advantages of this obturator as compared with a soft velum, I have no means of judging. Dr. Kingsley maintains that in a majority of cases a patient will never acquire distinct articulation with an obturator, but that when this difficulty has been overcome with an artificial velum, the latter may be changed from an obturator and the patient continue to articulate properly.

The question as to the relative merits of the Surgical and Mechanical treatment is one upon which the opinions of different men are, not unnaturally widely at variance, practising surgeons mostly favouring the operation, while those who have had the largest experience in the mechanical, prefer that mode of treatment.

The advocates of mechanical treatment state that in a large majority, if not in all the cases which have come under their notice, where the operation has resulted in a complete surgical success, the result as regards articulation has left very much to be desired. But they must remember that those cases where phonation has been perfectly or almost perfectly restored are the very ones which they would be most unlikely to become acquainted with; the subjects of the operation passing current in society with the defect unnoticed, there being nothing to call attention to the fact that their organs of articulation are or have been other than normal. It must, moreover, be borne in mind that in order to obtain to the fullest extent the benefits of the operation, it is necessary that the patient should receive systematic instruction in articulation by a professed master of elocution. Now, if we contrast the social condition of those upon whom the operation is performed with that of those who are treated mechanically, we find that of the former class the majority are hospital patients who do not understand the necessity of, and are not in a position to afford this after education, while the latter have to pay a high fee for the treatment they receive, to which the addition of a few pounds for the elocutionist is only an inconsiderable item. From this it appears that the latter class as a whole possesses advantages which the former is without, and hence it is manifestly unfair, from these typical cases, to generalise as to the relative merits of the two methods of treatment.

On the other hand, not only is it an incontrovertible fact than there are on record numerous cases where a surgical operation has failed to very materially improve the speech of the patient, but not a few surgeons have themselves expressed great satisfaction with the results of the mechanical as contrasted with the surgical treatment, and in some cases advocated the former. Thus, in a lecture delivered by Mr. Christopher Heath, at University College Hospital in 1882, he says; "The question of surgical interference is cases of cleft palate is one which must be considered as still *sub judice*. That it is to possible close the entire length of a cleft, extending through both hard and soft palates, at an early age, is undoubted; but it may be questioned whether, in many of these cases, a better result as regards articulation would not have been obtained by the use of some form of apparatus." Mr. Heath also states that Sir William Fergusson was of opinion that about 50 per cent. of the cases admitted of operation; and yet, now, we commonly see all submitted indiscriminately to the knife, irrespective of any considerations as to the quality of available material in the flaps, their length, or the prospect of the sutured palate being not so contracted by the cicatrix as to be stretched tightly close above the tongue, contracting the opening into the mouth, and rendering inevitable a marked nasal intonation.

The reasons why, in most cases after operation, the improvement in speech is not so great as we might expect, are mainly three :—

First. Tuition is absolutely necessary, both that the muscles of the palate may be trained to their new functions, and that the old and vicious habit of raising the back of the tongue to close the cleft may be irradicated.

Secondly. The palate may be so contracted as not to admit of being raised enough to properly open the passage to the mouth and shut off that of the nose.

Thirdly. The palate may be too short to allow it when raised by its muscles to reach the back of the pharynx.

These considerations seem to indicate that an operation should not be undertaken where there is only scanty material in the flaps with which to form the palate; nor where they are so short as to give no reasonable hope of the palate, when united, being long enough to reach, or nearly reach, the back of the pharynx: for, while in such a case, it would be impossible to lengthen the palate when once the operation has been successfully performed, this might easily have been done had mechanical treatment been adopted.

On the other hand, in those cases selected with judgment, where their seems a reasonable prospect of success as regards phonation, it is undoubtedly better that the cleft should be closed with natural tissue than with an apparatus which requires constant and careful cleansing, and occasional renewing, and is naturally liable to an accident which places the patient for a time in his former disagreable position. For my own part, while I think that at the present time many cases are operated on where mechanical treatment would yield better results, I cannot by any means go so far as some American gentlemen who maintain that in no instance should the operation be practised. The question should be decided in each individual case by an unprejudiced surgeon, who has had a large experience in both methods of treatment. His experience will enable him to decide on the best method for that particular case and he will advise the patient accordingly. But it should be remembered that the ultimate result will depend, to a great extent, on the subsequent tuition, whether the treatment be that of the knife, or of an artificial velum.

ON THE INFLUENCE OF MICRO-ORGANISMS IN THE PRODUCTION OF CARIES.

By Arthur S. Underwood, M.R.C.S. and L.D.S., Eng.,*
(Lecturer on Dental Anatomy and Physiology at the Dental Hospital of London Medical School, &c.)

(*Concluded from p.* 601.)

We erected a large incubator, which we kept continually at the temperature of the human mouth; it was divided into an upper and a lower story, which communicated by an aperture. In the upper story was a small bath with a tiny tap contrived to drip drop by drop through the aperture into a second bath in the chamber below; this again dripped into a receiver, the fluid being thus kept in constant circulation through the middle bath. In this middle bath were placed some teeth set side by side as in nature, the roots being implanted in a block of hippopotamus ivory, and weak points created in the interstitial parts with the burring engine, the size of the burr being kept to test any enlargement of the holes, and some others implanted in wax. The upper bath was then filled with saliva, milk, bread, decaying teeth, meat, &c.; while some fragments of the latter were inserted about the teeth in the middle bath. The lowest receptacle was periodically emptied, while the top one was periodically fed. Without troubling you with more details, we thus contrived to assemble the proper temperature, the pabulum movement, and the normal disposition of the teeth. Now six months of this highly unsavoury experiment produced scarcely any perceptible change, except that all the tissues became black, the holes drilled in the blocks and in the teeth were the same size, and their edges were not a bit softened. The putridity of the baths was however so offensive, that it was with some relief that we decided to abandon this particular experiment. We saw that some great essential condition was absent, and though a longer period might doubtless have produced slight changes, my health and appetite suffered from the constant exposure to all these putrid smells, and we agreed to stop the incubator; but this experiment, though apparently a failure, led us to what we conceive to be the true solution of the difficulty. So far we had decided only that some essential factor had been omitted.

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* Read before the Odontological Society of Great Britain.

The next experiment we shall describe is a repetition of one described by Dr. Miller, with this extension, that it has been carried out under septic and aseptic conditions. Two 8-oz. bottles were half filled with saliva; to this was added bread in both cases, and in one carbolic acid; into these were introduced fragments of healthy teeth extracted for regulation and split. The saliva was the same,—*i.e.*, from the same mouth,—and taken at the same time, the bread from the same piece, the teeth were halves of the same tooth; both fluids were neutral. The bottle not containing carbolic speedily became the scene of an active growth of micro-organisms, for the greater part micrococci; a thick felt of this growth formed at the surface of the fluid. At the end of three months the surfaces of the teeth in the impure flask had become softened, but not discoloured: the surface of those in the pure flask was unaltered, the fluid in the pure flask was neutral, that in the impure one strongly acid. Thus in the impure flasks acids were generated as well as germs, or, as we think seems more rationally to express it, by the germs. The teeth from these fluids are here for your inspection. Lastly, a number of teeth are here for your inspection in which a change has certainly taken place after a long immersion in septic fluids.

It is plain, then, that whereas in the absence of germs no change takes place that could be supposed to be caries, and that in the presence of the germs a change does take place, which, although it would render our views more cut and dried to call caries, we are bound to confess is a very weak caries if it be caries at all, and further, remembering that unmistakeable caries does affect natural teeth on artificial dentures which have no connection with the vascular system, we are led to inquire whether organisms, that are undoubtedly the prime factors in the production of other diseases, afford us any analogy of a loss of power were placed in strange conditions The answer to this inquiry is very plain and direct, and completely in the affirmative.

Pasteur, Naegali, and other equally reliable authorities, have discovered that special organisms alter their character when grown under unusual conditions. Even though they continue to grow and reproduce their species, their special properties weaken and die out in the unnatural surroundings. Thus, to take a couple of typical instances, Pasteur, by growing bacillus anthracis at a peculiar temperature, "attenuated" the organism to such an extent that he was able to vaccinate animals with it—that is, he rendered this special bacillus, which, in its normal condition, would, if inoculated into an animal, produce anthrax, practically innocuous by changing its surrounding conditions. Again, Nægali has been able so to modify the properties of a lactic acid producing bacterium that it produced an ammoniacal fermentation. Lastly, certain pathogenic bacteria require a special soil in which to grow a special temperature, otherwise the growth ceases altogether. Moreover, the presence of a number of extraneous organisms does in some cases hinder the active growth of others. A similar difficulty has attended the attempt to grow the organisms of gonorrhœal ophthalmia, and such instances may be almost indefinitely multiplied; the conclusion is, however, pretty plain, namely, that special organisms require special surroundings to display their special activity, and we are inclined to think that in the case of the micro-organism of caries a living mucous membrane is one of those conditions.

In view of these facts we feel ourselves justified in claiming to have established as a permanent addition to dental pathology the fact that micro-organisms of a special form do play an important part,—nay, more, that they are an essential factor in the production of caries. We think many of these experiments show that these organisms do much of the work —at any rate, as far as the removal of the lime salt goes—by the aid of an acid which they produce. We feel convinced that the process, to be effective, must be carried on in a living mouth, probably because that is the only situation in which the special germs are really active. Analogy seems to warrant this deduction; but before concluding we wish to impress upon the meeting, and through the meeting upon all who take an interest in the matter, that all we claim for the germ is, that without them and their products the process could not go on at all. The essential element that was not present in our artificial experiments is present in the mouth; it is possible, and we consider, from the analogies quoted above, *probable* that this important element is the living buccal mucous membrane as a scene of operations, and the constant succession of the proper germs. Enough has, however, been laid before you to induce us to hope that this Society will endorse the statement made by us in the August of 1881, and repeated more fully now, that micro-organisms play an important part in the production of caries, and that the dental pathology of the future must include them among the most powerful factors in the production of this disease.

We have only, in conclusion, to thank you, gentlemen, for your kind attention, and to leave the question in your hands for discussion.

THE CONSEQUENCE OF QUACKERY.—The *Patriot* says that the eldest son of Mr. Stephanus du Toit, of Cape Town, while suffering from tooth-ache last week, administered, on the advice of a friend, some poison to the affected tooth, with the very lamentable result that a few minutes afterwards he got serious convulsions, and having just time enough to cry out to his father, " Papa, I die," he expired. It is surmised that the poison either got in his blood through the application to the tooth, or that he swallowed some by mistake.

THE STUDENT'S SOCIETY OF THE DENTAL HOSPITAL OF LONDON.—A Conversazione of this Society was held at Leicester Square, on the 14th ultimo. It is always a matter of rejoicing to see re-unions of this character successfully and agreeably carried out. The vitality of this Society may be said to have never been greater than at the present time, and its members give earnest of being high promise in the career upon which they are about to embark.

British Journal of Dental Science,

LONDON, JULY 15, 1884.

DENTAL HYGIENE.

FIRST ARTICLE.

Without straining a term we may include alike the criterion of health among dental practitioners and the health condition of the dentists' rooms, under the heading Dental Hygiene. Perhaps, no meeting of the Odontological Society of Great Britain, treated of a subject so interesting, or so important as that which Mr. Oakley Coles brought forward at their last gathering. Dentists as a body have done, and are day by day doing more for the personal comfort and actual well-being of the community at large, than any other section of professional men. The quota which Dentists contribute towards the sum total of human happiness is not achieved, however, without a very considerable expenditure of energy and patient toil, which tell, and tell only too rapidly upon the threws and sinews of even the most robust. The character of the work of the Dental Practitioner is so peculiar, that it stands alone, alike in its arduousness and in the long list of ill consequences its pursuit engenders. The strained postures, the incessant standing, together with the delicate adjustment of muscular action, would alone tax the regulating centres of man's brain, but among dentists there are other and far more potent agencies at work, which sooner or later sap the vitality and induce a premature old age. Who can find any more terrible strain imposed upon a man than that which is the daily lot of every dentist in full practice. From morning until night, he has to set his attention as in a vice, he is compelled to rivet all his mind upon his work, he has a never-ending succession of nice and often recondite manipulative problems to solve. This labour day after day must be carried on indoors, often in hot ill-ventilated rooms, rooms unfitted for the purpose and offering every variety of ill-assorted conditions to the dentist, should his mind ever take into consideration questions of thermal units and north or western lights. And again, Who but a dental surgeon knows what the word "nasty" means? Nasty in their habits, nasty in their tempers, suffering humanity betake themselves to the dental atelier and expect there to find the courtesy and forbearance of which they themselves stand in such urgent need. The ranks of the profession show, alas, only too plainly the natural outcome of all this. Prematurely breaking down health, is now-a-days a common heritage, from the success of a rising dental practitioner. The wear and tear of life is too much, and outraged Nature taking her revenge, lays low the offender against her laws, stricken by one of the many neuroses which have begun to be set apart as the peculiar property of our unfortunate profession. Few would controvert the truth of all these statements, but on the other hand few would stir a finger to check a growing evil. So it is that this subject of such vital import receives but little attention, and the struggle for existence among the many, and for fame among the few, fulfil the office of Juggernaut's Car and crush the vitality out of their victims. Much can be done to ameliorate this, much in every way; and were the evil recognised more widely, and were the sorrows of failure in strength, to be attributed to their true cause—working during prolonged periods in unhealthy rooms—more care would be taken in banishing noxious influences and in correcting the sins against hygiene and common sense now so rampant. What are these sins, and how are they prejudicial to health?

Perhaps no more potent cause of lung complaint,—a cause at once predisposing and exciting—exists than that to which the dental practitioner is peculiar subject, namely, working for many hours in one room. It usually happens that he comes either from the open air, or at least from other rooms, which are kept well freshened by constant opening of doors and windows, and then he enters a room always hot and only too often ill-ventilated. His patients fear draughts and hate chilly rooms, hence he keeps his consulting room at a high temperature, and during the busy work of the day no opportunity usually occurs to change the stagnant germ-laden vapour which passes muster for an atmosphere. When work is over he leaves this for the cold outer air. It is alike the sudden changes and vitiated air which slowly, but surely play their deadly part in sapping energy of brain and impairing deftness of hand. All workers in hot rooms, sooner or later, pay the penalty, and anæmia once initiated makes rapid headway. Nor is the evil of the matter ended here. From the very nature of his occupation the dental practitioner has to assume and retain a constrained and unnatural posture during the greater part of the day. And here again, exists a most prolific source of after trouble. The visceral cavities must be free from external pressure if the functions of their contained viscera are to be efficiently performed, a condition only possible in the erect or supine positions, while nervomuscular diseases find in the cramped and constrained posture a ready seat for their development.

Nor is it difficult to explain the reason for this. The advanced physiology of to-day tends to curtail the belief in vital theories, and for these to substitute physical ones. The circulation in the body resolves itself into a physico chemical problem, and hence every kink and unnatural twist and turn of the body must necessarily impose some impediment to the circulation, and hence establish a barrier to the complete and efficient nutrition of the part.

It suffices for our present purpose that we have established, the fact that the calling of the dental practitioner is *per se* unhealthy, it will be the subject of succeeding papers, to point out in what lies the origin of this unhealthy state of affairs, and in how far these evils may be mitigated or removed.

GENERAL ANNUAL MEETING OF THE BRITISH DENTAL ASSOCIATION.

We have before noticed that this Meeting will take place at Edinburgh during August. Although no set programme has at present been definitely arranged, we are enabled to state that the course of business will be much on the same lines as those adhered to at Plymouth.

The Meeting of the Scottish Branch is fixed for August 28th, and a Conversazione is fixed for the evening, and is to be at the Foresters' Exhibition.

On Friday 29th, the General Meeting will take place, and several papers on various subjects will be read, as well as the two Presidential Addresses.

It is probable that a second sèance will be held on the Saturday morning.

The practical side of the Dental Art will be exemplified by some Demonstrations, on Gold Filling, by Dr. Walker (London); Mr. W. E. Harding (Shrewsbury); Mr. R. F. H. King (Newark).

Mr. Robert Woodhouse will give a demonstration on "Combined Tin and Gold Filling," and Mr. G. Brunton (Leeds), will give one on "Rubber Work."

Among the Papers which are to be read, Mr. Robert Read (Edinburgh), gives one upon "The Application of Dental Science to the Detection of Crime." Dr. Walker on "Educational Centres." Mr. Henry Sewill returns to the charge and again attacks "Dental Caries," proposing to consider its prevention. Mr. G. W. Watson selects "Antral Abscess" as his subject, while Mr. Campbell of Dundee, treats "Fractures of the Lower Jaw." Mr. J. R. Brownlie also contributes a paper.

On Friday a Dinner is to take place at the Waterloo Hotel, at 7; and for Saturday, various pleasure trip have been arranged, notably one by steamer up the Frith of Forth.

DENTAL HOSPITAL OF LONDON MEDICAL SCHOOL.—The distribution of prizes is to take place at 40, Leicester Square, on Thursday, July 17th, at 5 o'clock. The chair is to be taken by Mr. Alfred Coleman.

The child it is said is father to the man, and so in the same sense may the student be deemed to be the parent of the practitioner. The honors-man is not always the best man, but it is a fairly safe assumption that the man who is successful as a student, and who in the keen competition which exists at the present day, will carry his head high when compelled to enter the arena of actual life and its conflicts. We are informed that Mr. Coleman finds it impossible to be present, and that Sir Edwin Saunders has kindly consented to officiate in his stead.

IT is a pity that the bulk of students do not recognise the importance of gaining class distinctions, and throwing themselves into the broad tide of competition. There are too many who enter the portals of dentistry because forsooth it is easy, and can be soon mastered (*sic!*) they assume that they have "*plenty* of time."

IT is astonishing how very little is known by the would-be dental student, as to what will be his work, and what will make him a success in after life. The ordinary "guides" who profess to explain the ins and outs of how to get qualified as a medical man, ignore dentistry. There is a want of a really good and efficient guide upon the subject.

MR. ALFRED COLEMAN.—We learn with very considerable regret that Mr. Alfred Coleman, F.R.S., has been compelled, through failure of health, to send in his resignation of the post of Examiner in Dental Surgery, at the Royal College of Surgeons. The resignation was accepted and deep regret expressed for the loss of so able a colleague.

There can be little doubt that the Examining Board sustain a heavy loss in Mr. Coleman's retirement. We trust that the rest from his arduous professional duties, will lead to a rapid restoration to health and strength.

Apropos of students and their future we may quote some ery pertinent remarks of Dr. Brophy of America. He says: "To ecome a skilful dental surgeon requires years of study and linical experience; and this is necessarily expensive. There s no occupation with which I am acquainted that involves a reater expenditure of vitality than the practice of operative lentistry. A dentist in full practice passes through as many, f not more, trying experiences as do members of any other ursuit in life. To be a skilful and conscientious dentist, to e successful as a practitioner, implies *enthusiasm* in the puruit of knowledge. Gentlemen, I am a believer in enthusiasm, ot in the sense which denotes wild and extravagant notions hat lead to dangerous and unprofitable ends, but in the enhusiasm and intensity of purpose which have been the conpicuous features of the character of men, whose life-work has een crowded with eminent success."

Manipulative Miscellany.

All instruments or articles wished to be described under this heading are requested to be sent *for inspection* to the Publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against one another. All makers, vendors, and inventors, are invited, with strict impartialisy, to contribute towards this end.

NEW UPPER MOLAR FORCEPS.

Mr. Collins, of Poland-street, has made a novel pair of upper molar forceps having two thin narrow blades, well calculated to pass readily between the alveolar process and the tooth. They are designed to grasp the tooth by the internal and the external anterior fang, and being reversible, can be applied to either side molars.

We have not been able to put them to the test of use, but they look to have "tremendous go" in them, and being capable of removing any teeth or stumps in the upper jaw, are pretty sure to be appreciated; and as an adjunct to sets of forceps in general, seem likely to become exceedingly useful instruments.

Abstracts of Foreign Journals.

MONATTSCHRIFT DES VEREINS DEUTSCHER ZAHNKUNSTLER.

"ABNORMAL DEVELOPMENT OF THE JAW, with some remarks upon its Regulation." By Ad. Werner, Dentist.

Some months ago, a girl, ten years old was brought to Herr Werner. She had from early childhood been unable to open her mouth naturally. The peculiarity had not attracted much attention till she attained the age of six, when it began to affect her speech and cause difficulty in the taking of food. Upon examination it appeared that when the jaws were closed the lower incisors met on the hinder surface of the gums of the upper incisors, the latter standing in their regular order.

At the side were the two milk molars and also a small void space. The first molars were appearing, and nearly touched, while the milk canines were still firm and articulated in the same way.

When the under jaw was drawn downwards, the lower incisors moved about a half centimeter from the upper, so that the upper part of the lower incisors was invisible, being hidden by the upper. At the sides, when the jaws were opened, there was quite a centimeter more space, which, towards the molars was again reduced to half.

It was observed that when the child eat solid food she managed to remove it from the side into the cavity of the mouth.

This abnormity was apparently brought about by some irregularity in the growth of the alveolar border, particularly in the front and side parts.

Herr Werner considered the simplest method to rectify this defect was to supply some opposing obstacle between the rows of teeth, which would prevent the closing of the jaws, and caused the child to make a strong effort to separate the jaws both in speaking and eating. After obtaining an impression of the teeth in the under jaw with much difficulty, he made from it a plaster model; a cap was introduced into the mouth, where it was held sufficiently firm by the working of the muscles. Though the contrivance caused some discomfort at first, afterwards the patient was able to wear it day and night for a fortnight, when there was a space of one and a half centimeters between the front teeth gained—that is to say, the child could open her mouth so wide that the incisors of the lower jaw stood one and a-half centimeters away from the incisors of the upper.

Upon this, another impression was taken in order that a better fitting cap might be placed in the mouth. This was done, and was only removed twice during the day for the purpose of cleansing.

After this, every week the space between the jaws increased rapidly, and in six weeks the incisors could be separated without difficulty to a distance of three centimeters, but now it was observed that the patient was unable to close the mouth perfectly. The contrivance was removed, but still the same result, not a single tooth in the lower jaw struck its antagonist. The molars which had formerly just touched, were now separated from the front teeth by a space amounting to half a centimeter. Not only were the masticating muscles stretched, but also the continuation of the ascending ramus of the lower jaw up to the temporal muscle.

Thus, though the difficulty of opening the mouth might be caused by the constant wearing of the instrument, the opposite difficulty—that of a perpetual open mouth, would be brought about; and this was avoided by the patient wearing the instrument from time to time, and always removing it at meals, the action of the masticating muscles thus restored energy to the jaw muscles.

It is eighteen months since the patient first came to Herr Werner, and for twelve months the instrument has, under his direction, been worn continually at night. It was found necessary to make a third instrument after the second had been worn some time, owing to the changing of the jaw, consequently upon the growing up of the bicuspid, which has been worn ever since.

"Tooth Pivots," By Paul Köhler, Berlin.—The practice of setting artificial teeth by means of a pivot, appears to have some advantages over the usual method, viz. that of a caoutchouc plate, and the result is worth the amount of extra trouble and patience it entails.

The tooth is prepared in the usual method, and the nerve of the tooth treated and dressed with eau de cologne and chloroform (2 parts chloroform and 1 part Eau de cologne). Then a very small drilling machine is introduced into the entrance of the nerve canal and is allowed to work slowly without moving from side to side. Afterwards a stronger file is brought into requisition and used with a slower movement of the drilling machine to prevent the root from becoming too hot. The canal is made as deep as possible, and 1¾ millimetres deep, *the same width*: some 1-2 millimetres above the entrance a groove is cut which surrounds it. Then the wooden pivot is made, and placed loosely but not so as to move about in the canal; it is provided underneath with a peg by which it reaches some ½ centimeter out of the canal. The impression is then taken with plaster or stents, which runs all round the pegs of the wooden pivot and sticks to it after the impression has become hard, so that all can be removed from the mouth. The now prominent wooden ends are slightly oiled without touching the model and the impression taken in plaster.

After the impression of the model is taken, the holes made by the drilling machine being still there, the side and width of the holes is obtained, by means of the boring machine last used. The teeth are now cut, which is done in the same way as when a caoutchouc plate is used. If the tooth fits exactly, a pivot of 18-carat gold is introduced, which is bent or filed according to necessity between the brackets of the teeth, till they stand in a row with the other teeth and are supported by the pivot. Tooth and pivot are bound together with wax, plastered and soldered.

When it has cooled the tooth is heated, the brackets bent with flat tongs, other rough places made if necessary, and the tooth placed in the previously well soaped model, and so much hot wax is allowed to flow on the teeth as is requisite for the establishment of an artificial tooth support. Then it is removed, examined as to whether the impression of the shape is correct and vulcanized with soft caoutchouc. After finishing, some three cornered grapple hooks are cut with the cock-saw on two sides of the pivot and the tooth set in.

After drying out the canal and being satisfied that the tooth fits, a tolerably weak fluid is made from Rostamy's Dentinagene, some of which is put in the canal and in the furrows cut round, and some laid on the root stump.

The tooth is placed after ascertaining its proper position by turning it slowly backwards and forwards. If no superfluous filling mass flows over, the tooth is again taken out and some filling mass placed in the boring hole. If the tooth remains firm it is held firmly with the fingers until the stopping is hard and the surplus stopping taken away with a proper instrument. It is best to spare the tooth as long as possible that its firmness may not be imperilled by too early use.

In this manner a firm and natural tooth setting is obtained without pressing too much upon the root, and this prevents the ugly swelling, which is the reason so many people object to pivot teeth. The so often mentioned disagreeable smell is also avoided, as the pivot is as strong as possible to prevent a bending of the artificial tooth, and all spaces are filled with the Dentinagene.

BERLINER KLINISCHE WOCHENSCHRIFT.

"EARLY FORM OF LUPUS OF THE MUCOUS MEMBRANE OF THE SOFT PALATE." (Case shown at the Berlin Medical Society on May 21, 1884.) By Dr. Krause.

The patient, I am about to show you, was sent to me by Professor Köbner, under whose care she has been for lupus of the outer parts of the nose and nasal mucous membrane. She has been treated with the sharp spoon and with Professor Köbner's pencils of chloride of zinc. This patient who is now seventeen was very scrofulous as a child; two years ago she was obliged to have the forefinger of the left hand removed, on account of caries no doubt of a scrofulous nature, and she states that her nose has been in its present condition for a year and a half. The affection of the velum palati has as yet caused no subjective symptoms, and the patient was very painfully surprised when she was told she had the same disease on her soft palate as on her nose. The affection of the velum palati is of special interest because it shows, notwithstanding its small size and slight extent, a splendid paradigma of an early form of lupus of the mucous membrane. Thus we find in the centres of the mouth, or an adhesive portion of the membrane, without any kind of infiltration, surrounded with a narrow red ring, a lump the size of a pea, which is evidently due to the junction of three yellow papillary excrescences the size of a hemp seed; next to these, to the right side of the mouth, on the palate glossal arch an isolated lump also as large as hemp seed.

Posterior rhinoscopy shows the nasal cavity to be free from lupus tubercles; the septum narium is evidently much thickened posteriorly and to the right, but the swelling does not appear to the naked eye to be of a lupoid nature. The vocal cords are hyperaemic about the processus vocalis. The epiglottis and the remainder of the larynx present no abnormal signs.

Quite recently several important papers have been published on this very condition; amongst others by V. Chiari, and Biehl, next by Haslund and lastly those which treat of the discovery of tubercle-bacilli in cases of lupus by Demme, Doutrelepont, etc. I extract a few statements from the work by Chiari and Biehl. Contrary to the views of most other authors, they look upon the formation of the lumps in the mucous membrane as the primary symptom and the infiltration of the membrane as secondary, not the reverse. According to them, the affection of the mucous membrane commences without any disturbance of function and quite painlessly, and is only noticed at a comparatively late stage; this is the reason why the initial symptoms so seldom come under observation. They therefore strongly recommend the careful examination of the mucous membrane in all cases of lupus. This example of ours would tend to support the advice of these authors. Chiari and Beihl further give a list of thirty eight published cases of undoubted lupus of the larynx, of which six came under their own observation, out of a total of 68 lupus patients, or at the rate of 88 per cent. In all these cases, with the exception of three, the epiglottis was the part principally affected, the proportion being much smaller in the other parts of the larynx. Lupus of the larynx was a rule met with in young girls—lupus of the pharynx is only occasionally mentioned. Of 33 cases of this kind, 25 were in persons of the female sex, and out of these 15 were under twenty; of the eight men likewise 4 had not reached the age of twenty. All the patients showed signs of lupus of the face ;—2 girls and 1 boy were alone free from disease of the outer skin. Haslund, following in the wake of these authors, gives a summary of 10 cases of disease in the larynx out of 109 cases of lupus, or 9·1 per cent. On the whole, he confirms the dicta of Chiari and Biehl, especially with reference to age and its great prevalence among females; of his ten cases only one was a male of 16. In the large majority of the cases reported, the disease commenced on the face, *i.e.*, about the nose, and afterwards spread to the mucous membrane.

With regard to the diagnosis, which is not always easy to establish, according to the authors of previously reported cases, it would appear to have been made easier by the recent discovery of tubercle bacilli in lupus. Dautrelepont considers the assumption, that lupus belongs to the tubercular affections fully justified, as had previously been urged by Friedländer on account of his histological researches. If the etiology of lupus and tubercle be the same, new difficulties at once arise for the explanation of the differences in the clinical characters of the two forms of disease. As we have stated before, lupus of the larynx in by far the large majority of cases is an affection of very early ages; this does not hold good for tubercle of the larynx. While in tubercle as a rule we find the internal organs first affected; with but very few exceptions which only tend to confirm the rule, lupus usually shows itself on the cutaneous surfaces. In a case of tubercle of the pharynx which was shown to this Society last February and which died on the 2nd of April, we found this part affected only towards the end of life, here we find it in a still perfectly strong person, and under entirely different external appearances. Further, in old and extensive cases of tubercle of the larynx the epiglottis often remains unaffected; in lupus of the larynx, according to the statistics of Chiari and Biehl it is almost without exception the part principally affected. Lastly, another differential sign which tends to separate lupus from tubercle, is the more frequent tendency to the formation of cicatrices.

As for treatment, strong measures are called for, I will destroy the lumps by means of the galvanic cautery, and will, with your permission, let you know the further progress of the case.

DENTAL COSMOS.

"DENTAL MINISTRATIONS TO CHILDREN." By A. H. THOMPSON, D.D.S., Topella, Kansas.

The increasing prevalence of Caries makes it desirable that children's teeth should be placed under the care of the dentist early. Three years old is given as the time when the dentist should commence his ministrations. The paramount importance of gaining the child's confidence is insisted upon, and hence the infliction of pain must if possible be avoided or at least reduced to a minimum.

The anticipation of the operation is justly pointed out as being the worst part. Dr. Thompson advises appealing to the child's reason and avoiding all coercion. All "pious frauds" such as "it wont hurt a bit," are equally bad. In these matters the parents are to blame. Bribery may be useful, deception engenders distrust in all, and makes the child the reverse of tractable. In extraction, if the pain will be severe, the use of anæsthetics is advocated for we are told, "Children possess a thorough immunity from the dangers of anæsthetics," a statement we are bound to receive with caution.

Children terrify one another by their narrative of personal experience.

Some children are so obstinate or "cussed" as Dr. Thompson asks leave to express it, that candour failing, force must be called into requisition.

In filling deciduous teeth it is all important to gain the child's confidence. To obtain this, do nothing at the first sitting. If odontalgia exists treat it, do not frighten or hurt the child for the first few visits. Children have little patience, hence the sittings must be short. It is suggested that the child's curiosity should be excited by explaining the mouth mirror, &c., and so making him wish to come again.

Congenital defects in the deciduous teeth often require treatment as soon as the teeth are erupted. The labial surfaces of the incisors and first molars are peculiarly obnoxious to these defects, which are accompanied by pain. After securing the child's confidence a rapid application of oxyphosphate filling should be made, dry if possible, submarine if necessary. In a few weeks prepare the cavity and again fill with oxyphosphate.

When the child is docile and strong, approximal cavities may be filled with gutta-percha and grinding with amalgam, both without much preparation. If these stoppings fail they can be renewed, but as a rule little else than the phosphates can be used up to the age of three or four years.

In preparing cavities in very young children, thorough excavation and drying must be dispensed with. This work, although not perfect, answers best with children.

The filled cavities should be inspected once or twice in four months. If the phosphates do not wear, gutta purcha must be used for cavities where there is no attrition, when this is present amalgam should be employed.

In larger cavities amalgam may be used if the margins can be cleared and some undercut made. No large cavity in a deciduous tooth should be cleared in the direction of the pulp. The oxyphosphate filling in such cases is liable to kill the subjacent pulp, phosphoric acid being liberated. Hence it is wise to place something, *e.g.*, carbolic acid and chalk between the phosphate and the pulp.

Should dead deciduous teeth be filled? If they are, abscess is likely to follow and to occasion fistula. To avoid these most dental surgeons think it best to leave these teeth unfilled so as to admit free egress of pus. The absorption of the teeth will be sufficiently slow to avoid deformity.

When the permanent teeth are erupting, the child should be frequently seen that regulation may be effected by judicious extraction. "Sometimes space will be acquired in a short time without removal of the adjacent deciduous incisor or bicuspid before its own time, when to remove them would lead to a spreading of the permanent incisors." To avoid rotation of the central or lateral incisor we may have to remove the adjoining teeth. But this step may lead to contraction and deformity of the jaw and so must not lightly be undertaken.

The permanent teeth in childhood also require care to avoid caries or treat it; at eruption these teeth resemble the milk teeth and hence are more liable at that time to caries. Their treatment must also be like that adopted for milk teeth. Hence plastics are better than gold.

The sixth year molar is usually mistaken for a first dentition tooth—it must be however carefully preserved and medicated rather than extracted—if extracted an anæsthetic must be employed.

The permanent incisors are not liable to caries at first, later the approximal surfaces suffer and should be treated with gutta percha. At maturity this may be replaced by gold.

Approximal cavities on bicuspids and molars must be treated in the same way when not exposed to attrition; when so exposed amalgam should be used at first and replaced later by gold. If the cavities are large oxyphosphates are indicated.

THE INDEPENDENT PRACTITIONER.

"FERMENTATION IN THE HUMAN MOUTH; ITS RELATION TO CARIES OF THE TEETH," by Dr. W. D. Miller, Berlin.

(Continued from p. 615.)

A further experiment is described: A sound bicuspid tooth was sawn into sections, varying from one-third to one m. m. in thickness, and an equal number of these sections placed in each of two test-tubes. Five c. c. of a perfectly neutralized two per cent. aqueous solution of beef extract was placed in one of these, and into the other the same solution, with the addition of 0.2 cane sugar. Both tubes with their contents were then sterilized, and, upon cooling, infected from a pure culture of the fungus under consideration.

The solution in the second tube became acid in a few hours; not so that in the first tube. At the end of one week the thinner sections in the second tube were so softened that they could be easily bent between the fingers. All but the thicker sections were completely decalcified in 14 days. A microscopic examination of a section, showed that the fungi had penetrated many of the tubules to a considerable depth, the invaded tubules being at the same time slightly extended. At the close of the third week the invasion was much more extensive, the tubules dilated, and in some places the walls were broken through, leading to the formation of oval spaces or caverns in the dentine. We had a typical case of caries.

A section from the other tube showed none of these changes; caries was then produced by inoculating sound dentine from a pure culture of a fungus found in carious dentine, in the presence of the same fermentable substances that occur in the mouth.

Pieces of dentine in a solution kept constantly pure and sour by fermentation, show the microscopic changes characteristic of carious dentine, and after some months, disappear altogether. We must infer then that putrefaction is absolutely essential at no stage of caries; especially in caries of enamel.

The active agent in this process is nearly related to, if not identical with, the fungus of sour milk: *Bacterium acidi lactici.*

The analysis of the products of fermentation support this view.

The methods by which Dr. Miller performed these analyses, are then fully and carefully described.

His results show the presence of lactic acid in carious dentine.

The two analyses described show that the acid generated by the fungus in question is the common ferment, lactic acid.

The distillate owed its slight acidity, in part at least to lactic acid. To ascertain, however, whether any other acid, especially volatile, was present, the distillate was boiled with carbonate of lime, filtered, evaporated to dryness, a small amount of dilute sulphuric acid added, and heated in a retort over the water-bath; a few drops of an oily acid came over, which, when taken upon the fingers, smelled like butyric acid; the amount, however, was so small, that no attempt could be made to analyze it.

The presence of lactic acid in carious dentine, can be demonstrated by a simple method in theory, but difficult in practice. The first and second attempts were only partially successful; the third succeeded better.

In this experiment fifteen teeth, were used, all containing considerable quantities of carious dentine, and all extracted on the day of use. The remains of food were first removed from the cavities, but none of the softened dentine; then all the softened dentine was taken out and placed in a porcelain vessel, cut or picked into fine pieces, placed in a test-tube with one c. c. of water, and two drops of a ten per cent. solution of hydrochloric acid added. Any free lactic acid in the carious dentine would remain free, and any existing in combination with lime would be set free by the hydrochloric acid. It was then gently shaken with about twenty-five c. c. sulphuric ether, and the latter, holding the lactic acid in solution was, after some minutes, poured off into a second test-tube; here it must be allowed to stand from twenty-four to forty-eight hours, till it becomes perfectly clear. It was then filtered into a porcelain dish, evaporated, a few drops of distilled water and a small quantity of *freshly prepared* zinc oxide added, gently boiled (water being added as neccessary) for ten minutes, the three or four drops of liquid remaining filtered on to a glass slide, and allowed to crystallize. Crystals closely resembling those of lactate of zinc were obtained. There can, in fact, scarcely be a doubt that they are lactate of zinc crystals. The lactic acid concerned in their formation must of course have existed in the carious dentine.

Literary Notices and Selections.

TRISMUS NASCENTIUM; OR, THE LOCKJAW OF INFANTS.

Itl History, Cause, Prevention, and Cure.

Illustrated by Cases and Post-mortem Examinations, with Statistical Table of Two Hundred and Twenty-nine Death.

By P. F. Hartigan, M.D., Washington.

Concluded from page 621.

When attention was first called to Dr. Sim's views, the efficacy of a plan so simple and promising such happy results was tested by many physicians. Some saw the patients soon after the first convulsion, and were able to rescue them; while the large majority arrived probably several hours, even days, subsequently, and of course as a rule could not afford much relief. This is sufficient to account for the rejection of the theory. I myself confess to some disappointment until repeated observations made the cause clear. I found some instances where, on account of deficient ossification, or the looseness referred to, the symptoms were precipitated during or shortly after delivery, death following in a few hours. These fortunately constitute a very small percentage, and are probably attended by contusion of the medulla oblongata. They are not altogether hopeless, however, for sometimes death may be averted with proper manipulation, and, if necessary, tracheotomy. When the disease occurs later, and the patient is seen on the eve or shortly after the first convulsion, in other words, during the stage of congestion, progress can be arrested, as is amply shown in Dr. McLaughlin's case.

It is not always necessary to the development of the disease that displacement should be marked or visible. In either case, from continued decubitus, unpleasant symptoms may arise, which subside when the child is taken up—the pressure being thereby relieved—only, however, to recur when the infant is again laid down.

The fact that the post-mortem appearances are not uniform was advanced by Dr. Baldwin as irreconcilable with Dr. Sim's views of the pathology of the disease. As has been already shown, this is accounted for by the many who die of asphyxia, from severity of the paroxysms, and consequent congestion of the lungs, before there is time for extravasation. The post-mortem appearances, therefore, and the duration of the disease and its symptoms, really depend upon the degree of pressure, from the slightest to the greatest possible, modified or intensified by its intermittent or persistent nature.

Another class remains to be mentioned, in which *position* alone cannot rectify the displacement. This either depends upon too great ossification and consequent impaction, or the apex of the occiput is dislocated or curved inwards. Here a surgical operation becomes necessary. Such cases would require the most diligent manipulation and attention to afford a chance of success; indeed, I do not know that any contrivance could be devised to retain the incurved apex *in situ.* Dr. Sims reports a case where he punched the scalp with a shoemaker's awl, and with the edge of the parietal as a fulcrum endeavoured to force out the bone, but he did not succeed. He then followed the plan of Dr. Harrison, and cut down on each side of the lambdoidal suture; and with the flat end of a probe on one side and a director on the other he pushed out the edges of the occiput. The effect was satisfactory, all the urgent symptoms becoming modified, but they would instantly return by letting the bone fall back. Although permanent good was impracticable, the result showed clearly that the symptoms were dependent upon mechanical pressure. The only case of this kind that I saw before death was through the kindness of Dr. Smith Townshend, health officer; the patient was moribund. After cutting through the lambdoidal suture I force the bone out; a marked mitigation of symptoms immediately followed. There were no means to hold it in its position, but the child lived till the next day. At the examination of the head no effusion was found to have followed the operation, and it was with difficulty the opening in the commissure could be found.

The operation that Dr. Harrison successfully performed was for depression and impaction of one side. Dr. Hart performed a similar operation, and forced the occipital bone back to its place. The child had one convulsion and recovered; it was kept reposing on either side. In such cases I believe there is every assurance of success when performed upon early; but where the incurved apex cannot be rectified, the child is then born but to die, the symptoms being generally manifest soon after birth.

Drs. Wilhite and Bryson compared the effect of a spicula in the adult to the pressure of the occiput in the infant. Now, while the results are the same by relieving such pressure, it will be apparent that the effects on the infant are more profound, for instead of local irritation we have contusion at the *fons et origo*, or base of the brain. That such effects are not confined to the human race, is shown from the following striking comparison by Dr. Bryson. "Those who are hunters have noticed, doubtless, in killing a wounded bird by pressure of the thumb upon the base of the brain, the cry of alarm, the spasm and rigid contraction of the muscles; and, if the pressure have not been exerted to a fatal extent, and the thumb be removed, how the rolling of the eyes ceases, the rigidity departs, and the bird seems as well as ever."

The custom of "bouncing" on the arms or lap, for the supposed purpose of quieting the baby, is another evil. Precaution against the disease ought to be observed from birth, by proper instructions to the mother and attendants, and especial care should be taken that the child has a soft feather pillow to lay its head upon when asleep, during nursing, or when carried in the arms or lap. Such article should constitute one of the indispensables of the baby's toilet. This is probably the principal reason there are not more victims of trismus among the better class of people, among whom infants are not allowed to lie upon the back in a narrow crib long enough for injurious effects; among whom, too, they have the attention of well-paid nurses, and the benefit of frequent change of position from the lavish manner in which they are fondled.

The fronto-parietal position, or face looking toward the horizon, is the proper one generally for either occipital depression or overlapping of one side. In all conditions the disease results from a pressure expended at precisely the same point. The less direct and less powerful, as shown, accounts for the chronic form or trismoid.

One more interesting point in this subject is the cause of still-born children, where the cord is not at fault, and when movement has been distinct just before and during a tedious labour. Death cannot occur from asphyxia, because respiration has not set in. What, then, will cause it but prolonged pressure on the brain? In a still-born infant that I saw recently the incurved thumbs and toes, and general stiffness, attracting my attention, examination showed intense congestion and dotted extravasation of the spine, and posterior part, and base of brain. M. Theln (*Journ. de Chir.*, June, 1844) relates a similar case of a child born dead in a state of tetanic rigidity, but there was no autopsy.

Now, taking into account the mortality in Washington, New Orleans, and other cities, and their proportion of population, it is no exaggeration to say that the whole number who in the United States annually succumb to this disease is 25,000, which, when compared with the population of the globe, and the greater prevalence of the malady, chiefly from ignorance, in the eastern countries, is appaling to contemplate; for it gives a death-rate of more than half a million.

Thus I place this subject before the profession, earnestly invoking for it the careful consideration its importance demands. To myself it has been an exceedingly interesting study. I have not formed conjectures, and then moulded facts to suit them; but have honestly sought—not without personal sacrifice, and sometimes even personal danger—to accumulate trustworthy information. The whole matter is humbly submitted, believing, as the now lamented Dr. Sims has aptly said, "If I am wrong, contemporaneous observers will prove it. If I am right, future generations will feel it."

SYPHILITIC TEETH.

(*From the French of Alfred Fournier.*)

By J. William White, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO LADEHd ƎHꞀLPHIA HOSPITAL.

(*Continued from p.* 624.)

Polymortality of children takes place in families of persons affected with dental erosions. We know—and it is an important fact—that hereditary syphilis shows itself with the greatest frequency by what we may term "the extermination of the young." Syphilis kills children as no other disease does: it kills them in utero; it kills them at their birth; it kills them in their first months, or later. If the specific treatment does not correct the disastrous influence of this diathesis, several children of the same family—that is to say, two, three, four, five, six, or more, may pay fatal tribute to the hereditary poison. It is this fatality which we term—so many catastrophies of this kind passing under our eyes—the infantile polymortality of syphilitic families. It is a curious coincidence that this multiple mortality of the young is met with in families where we observe dental erosions. Given a child affected with dental erosions; go back to the family antecedents, and you will generally learn that several brothers or sisters of this child were still-born or died young. You will often be surprised at the unusual mortality of the children of this family.

In the following observations, all relating to persons affected with dental erosions, the figures refer to the mortality of children in each family. Observation of Pietkiewicz,[1] 3 dead out of 5; Chaboux,[2] 3 dead out of 4; Russell,[3] 3 dead out of 4; Fournier, 3 dead out of 4; Stanley,[4] 4 dead out of 9; Fournier, 4 dead out of 8; Stanley, 4 dead out of 6; Parivaud,[5] 4 dead out of 5; Rivington,[6] 4 dead out of 5; Fournier, 5 dead out of 9; Fournier, 5 dead out of 8; Fournier, 5 dead out of 8; Coupland,[7] 7 dead out of 12; Fournier, 7 dead out of 9; Coupland, 9 dead out of 15; Lancereaux,[8] 9 dead out of 12; Carré, 11 dead out of 12. What a striking parallel! On the one hand polymortality of children in syphilitic families; and on the other polymortality of children in families where dental erosions are met with. Is not this comparison significant? Is not this a positive demonstration?[9]

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[1] Observation before quoted.

[2] Of certain Lesions of the Naso-pharyngeal Region which should be attributed to Syphilis. Paris Theses, 1875, No. 430, p. 37.

British Medical Journal, 1869, Vol. IV., p. 86.

Thus, to recapitulate—frequent verification of syphilis in the parents of patients affected with dental erosions; frequent verification in the patients themselves of heredo-syphilitic symptoms; polymortality of the young in families where the erosion is observed—here are three facts of the highest importance, which establish very clearly, to my mind, the pathogenic relation of dental erosion with syphilitic heredity.

(*To be continued.*)

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[4] *Medical Times*, 1861, Vol. II., p. 240.

[5] Thesis of Couzon (Contribution to the Study of Interstital Keratitis) Paris Theses, 1883, p. 31.

[6] *Medical Times*, 1872, Vol. II., p. 433.

[7] *Medical Times*, 1880.

[8] Op. cit. page 330.

[9] It has been necessary for me to omit, in the argument which has preded, a number of accessary peculiarities of real interest. The following re some of the most important:

It has been remarked that, in syphilitic families, most frequently it is the eldest child, or the eldest of the surviving children, that presents the erosions characteristic of syphilis, while the younger ones are free from them. This fact has an easy and rational explanation to me, in the habitual and undisputed decrease of the heredo-syphilitic infection under the influence of time and treatment. There are cases, however, where several children of the same syphilitic family are affected with dental erosions. To quote but one example, Moon (*Monthly Review of Dental Surgery*, translated in the *Progrès Dentaire*, 1877,) has made a curious observation where, among three children of the same syphilitic family, there were two—one sixteen and the other eleven years old—who had dental erosions. In cases of this kind, where several children of a family are affected with dental erosions, it has been noticed that "these lesions are more marked in the elder one, and gradually grow less in the younger ones." (Hutchinson, the *Medical Times*, 1861, Vol. II., p. 624.) It may be that in a syphilitic family where several children are affected with dental erosions, others are exempt from them, without their escape being explained by any other reason than that of the law of diminution, of which we have just spoken. In the case of Moon, before quoted, we see a child of fourteen years presenting healthy teeth, while his elder and his younger brother (younger by three years) were affected with characteristic erosions.

Are dental erosions of syphilitic origin transmissable by heredity? This point is yet unsettled. An observation by a foreign author, Barraclough *Medical Times*, 1876, Vol. II., p. 349,) shows us two brothers, "syphilitic,"(?), who, affected with dental erosions, had between them six children, all affected with like or analogous erosions. But this case, curious as it may be, does not possess details sufficiently precise to be demonstrative.

Dental News.

ODONTO-CHIRURGICAL SOCIETY.

(Continued from p. 631.)

The President said he agreed with Mr. Biggs in deprecating the extreme slowness in the administration of chloroform for dental operations, which many practitioners favoured. He decidedly preferred having the patient brought under it rather quickly. As regarded the relative merits or advantages of chloroform and nitrous oxide, he thought the latter was credited with much more than it deserved. They could not look at the cerebral congestion produced by it, and say that it was absolutely safe, or that if they were the patient they would like to be kept longer under it than could be helped. He had administered chloroform ever since its introduction, doing so very freely in its earlier years, and had only one case which gave him any decided alarm. Except in cases where it could not possibly be avoided, he considered it most objectionable to any one, whether dental or medical, to act both as chloroformist and operator. In the unfortunate case detailed by Mr. Macleod, he did not think that any of them would have thought it necessary to have stopped and had more chloroform given so near the end of the operation. In a large percentage of their longer operations, the patient was partially recovered before they were completed, and no unpleasant results followed. He had to express his sympathy with Dr. Ronaldson and Mr. Macleod. In the hospital they gave chloroform much more frequently than nitrous oxide. The majority of the former had fallen to him, and in very few cases had he given more than two drachms, although in many of these more than six teeth have had to be removed. In regard to the newer anæsthetics, the drawback was the uncertainty of obtaining the genuine article.

Mr. Campbell asked if the attending dental surgeon gave the chloroform on his own responsibility?

The President—Invariably.

Dr. Smith said that there was one thing that had just occurred to him in connection with this matter. Dr. Phillips gave, in the Medical Gazette, 1844, the statistics of between 900 and 1000 of the major operations of amputations. He did not recollect the hospital; but the percentage of deaths without anæsthetics was about one in two of these operations. Professor Simpson ascertained that the number of deaths in connection with similar operations under chloroform was only one in four. He had no doubt that chloroform dimished the shock very much, and he believed that many of the operations that were now successful could not have been performed without chloroform. In operations such as that of excision of the knee joint, the patient would have sunk, or at least, the mortality would have been very much greater. He believed with Dr. Williamson that the chance of death was diminished by diminishing the shock. He believed that shock was diminished by the use of chloroform, and after all, if they took the number of deaths from chloroform as compared with other causes, they were exceedingly small. Let them look at the accidental deaths in the Registrar General's returns for Scotland in February last, and the following will be found:—Fractures, 40; Burns, 7; Poison, 4; Drowning, 14; Suffocation, 6; Delirium Tremens, 7; and if child-birth may be included, 23. Let them look at the number of railway accidents, stage coach accidents, and deaths from poisoning by drugs of all kinds, and compare them with those alleged to be from chloroform. He did not say that this was a good argument in favour of it, but it showed the percentage of deaths by chloroform was not large in the course of the year. People were impressed with the suddenness of the deaths, in the same way as with epidemics of cholera. For example, there were far more deaths from typhus fever during the last epidemic in Edinburgh than from any epidemic of cholera, only the deaths were not so sudden, and therefore created much less panic.

Mr. Campbell asked Dr. Ronaldson if he practised subcutaneous injections of atrophia and morphia?

Dr Ronaldson said he did not do it in the case that had been under consideration, principally because in so young and apparently so healthy a boy he had not thought it necessary. He had, however, done so recently, and he thought with benefit, in two cases, in one of which there was constriction of the mitral valve of the heart. Professor Chiene was in the habit of doing it regularly before the administration of chloroform, and he meant to do it himself. As regards the quantity of chloroform given, he quite agreed with the gentleman who remarked that in his experience it was best to put the patient quickly into unconsciousness. He thought it should be given freely and thoroughly, and that where they could put the patient rapidly under chloroform it was advantageous. At the same time it had been proved that when an animal inhales an atmosphere containing more than from 4 to 6 per cent. of chloroform there was greater danger of disastrous effects on the heart. Death from chloroform was comparatively rare, and he believed there would be far more deaths without chloroform than there are with it. Sir Joseph Lister, in his article on chloroform in Holmes' Surgery, pointed out that since the discovery of anæsthetics, cases of severe injury requiring operation and yet suffering badly from shock, were actually benefited by the administration of chloroform, which improved the pulse. Of course deaths from chloroform frightened the community much more than those which resulted from diseases acting insidiously and perpetually around us, no matter how preventible the disease might be. The public were not affected in the same way by deaths from ordinary diseases, and while the number of deaths from chloroform were very small indeed, they had a very startling effect upon the community.

Mr. W. Bowman Macleod said that he had very little to say in addition to the opinions already expressed, In answer to the query by Dr. Williamson as to whether he still used ethidene-dichloride, he had to say that he did not. If he got it pure, he found it to be all that he desired for the purposes he had in view, but it was impossible to depend upon it. They might get a quantity of it good one day, and the next a mixture, and that unknown mixture had become so frequent and regular in its appearence that he was obliged to give it up. The last of it he got was still standing at home, one-half—the upper portion—being a clear liquid, and the lower half an opaline mixture. He never thought of subjecting it to chemical analysis to see what the combination consisted of. Certainly it was not ethidene-dichloride, but there was no doubt that if they could secure it pure it would be better than nitrous oxide and ether. As to the remarks of other gentlemen as to the extent of the operations that could be done under nitrous oxide gas, he agreed with them. He could also cite cases in which eight or nine roots were extracted under the influence of gas; but these were, he held, quite exceptional cases—cases where there were very open mouths, where the roots had been extracted from sockets which were soft, and where there was no difficulty in obtaining access to the roots or teeth. He agreed with the statement that although there were far fewer cases recorded against the nitrous oxide gas, it was clear to operators that it had presented to them more cases of anxiety and disagreeable associations than the administration of chloroform. Certainly in his own practice he had never seen a case of death from nitrous oxide gas, but he had frequently seen cases of anxiety from the appearance of patients passing, as it were, near to the gates of death, but who fortunately turned and came back agan. Such cases were much more numerous than were found in the administration of chloroform or of any other anæsthetic. He might say, after carefully weighing the matter, that he felt that following the profession, not for his own comfort, but for the benefit of his patients, he could not refuse still to go on with chloroform till some better anæsthetic was presented to them. Since the occurence of the case he had described in his paper, he had had five cases in which he had to use chloroform for extensive dental operations. All these cases had resulted favourably. He was of opinion that they were not doing their duty to their patients if they did not use chloroform when it was called for.

The Chairman said he had much pleasure in expressing to Mr. Macleod the thanks of the Society for his interesting paper. (Applause.)

DAILY DENTAL RECORDER.

Mr. Campbell exhibited a copy of a "Daily Dental Rcorder," designed by Dr. Cunningham. He said that he himself had found it very simple and very efficient—a handy means of recording cases.

CASES OF INTEREST.

The President exhibited the model of a mouth showing suppression of an upper lateral incisor in the temporary set.

The Secretary showed the model of the mouth of a child with a supernumerary lateral incisor in the temporary set; and also the model of the mouth of an adult with two supernumerary peg-shaped teeth situated symmetrically, one on ether side of the mouth between the second molars and wisdom teeth.

The President remarked that instances of supernumerary teeth taking up the position between the second and third molars were by no means uncommon.

Mr. Biggs showed the model of the mouth of a deformed Indian boy, in which there was an immense protrusion of the upper teeth beyond the lower.

Mr. Watson exhibited some microscopic preparations. One of them showed a small portion of carious dentine fringed with such micro-organisms as leptothrix, diplococci, &c., which were of such special interest at the present time, in view of the researches of Dr. Miller of Berlin and others, as regards their agency in the destruction by caries of the teeth in man. The other preparation exhibited them also, the distention of the dental tubes which was observed being produced by their proliferation. Both specimens were stained with methyl blue, which was a great help in demonstrating them. There were a great number of other organisms present—bacteria, micrococci, &c., all being obtained from a carious cavity in a molar, but lack of time prevented Mr. Watson from demonstrating them.

The President then announced that their next meeting would be on the second Thursday in November (13th)

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Discussion upon Mr. Underwood's Paper on Influence of Micro-Organism.

Contiuued from page 628.

Again—Dr. Miller said the several forms of micro-organisms met with in carious dentine,—the micrococci, bacilli, &c.,—were only different forms of the same fungus. Mr. Milles stated positively that they were separate and distinct varieties. That was also a matter which outsiders like himself would like to see elucidated and settled by independent testimony.

Mr. C. S. Tomes said the questions brought before the Society in Mr. Underwood's paper, even though the lines of the paper were strictly adhered to, would require for their full discussion a much greater amount of time than was usually allotted to such discussions at the Society's meetings. There was, however, one point referred to by Mr. Underwood which he thought was worthy of comment, if only for the sake of emphasizing and calling attention to it, viz., the fact that many of these micro-organisms, when cultivated under conditions which they do not like, become stunted, as it were; just as was the case with a plant when grown under unfavourable conditions. And he thought it very probable indeed that the failure of Messrs. Underwood and Milles' artificial caries, experiments was due to this cause, to their being unable to give the micro-organisms just the conditions which suited them. In conversation with Mr. Underwood he had repeately told him that he should be extremely surprised if he ever did succeed in producing caries out of the mouth, seeing that the conditions under which it occurred in the mouth were so manifold.

He did not, however, think that Mr. Underwood was so near the mark when he attributed this activity in the growth of the organisms to the direct influence of contact with the buccal mucous membrane. It seemed to him that if we are to assign to these organisms the important share in the production of caries which many recent investigators were inclined to give them, it was quite essential that they should be able to reproduce themselves for a great number of generations with-

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[Correction.—In the July 1st issue, omit the words following "Again Dr. Miller said."]

out contact with any mucous membrane. To take the case of a small crown cavity entered by a narrow fissure in the enamel: if organisms could not grow and reproduce themselves for an almost infinite number of generations in such a crevice, caries would not go on in such a situation as readily as we know it does. Moreover, there were a dozen other conditions besides contact with mucous membrane to which the failure might be ascribed with at least equal probability. For instance, there was an amount of oxygenation in the mouth which it would be almost impossible to reproduce in a flask experiment,—currents of air were being constantly wafted backwards and forwards over a moist surface. We know also that there is a considerable consumption of oxygen in other somewhat similar processes, and that bacteria like oxygen, and do not grow very well without it. But he was not going to pledge himself to a hypothesis; he only wished to point this out as one of several other conditions which existed in the mouth, but which were not present in such experiments as Mr. Underwood had described, and that therefore the failure to produce caries at will in a flask or incubator experiment appeared to him to invalidate very little or not at all any inference which might otherwise be drawn as to the action of organisms in the real disease.

Mr. Coleman said he thought all present must feel deeply indebted to Messrs. Underwood and Milles for their very important researches. These certainly explained to a great extent what might be termed the *progress* of caries, if not its actual cause; and they would be of still greater value to the dental profession should it be found possible to deduce from them some more perfect method of prevention and cure.

At the same time it appeared to him that there were certain points which had been rather overlooked. For instance, that in certain conditions which one would suppose would be most favourable for the development of the disease, it did not occur. He referred to the state of things met with in some of those dirty-mouthed people occasionally met with, who even at the distance of some yards were most unpleasant neighbours. Yet, whilst their gums might be highly congested, the interstices of their teeth loaded with decomposing organic matter, and everything apparently most favourable for the production and increase of micro-organisms, still the teeth would be free from any appearance of caries. On the other hand, persons were met with of a different constitution who took the most scrupulous care of their teeth, by carefully cleansing them after each meal, the use of antiseptic tooth powders, &c., and yet we may find in such cases a considerable amount of rapidly progressing decay. It must therefore be admitted that the amount of caries cannot always be in proportion to the quantity of micro-organisms present.

There was another fact which he thought should be mentioned, and which he thought could not be fully accounted for by Mr. Underwood's theory, and that was that all the exanthemata, more especially scarlet fever, produced a change in the teeth which rendered them far more liable to the action of caries. It was found that in such cases the teeth decayed very rapidly. It might possibly be hereafter discovered that these diseases produce the special organisms which favour the production of caries, but he thought it was more reasonable to look for some change in the tooth itself. One might be laughed at for speaking of "vital force," but he thought few would be inclined to deny that there existed in the living frame a force which protected it from the ordinary action of oxygen, moisture, and those other agencies which tend to break up complex nitrogenous compounds. And that, under the circumstances just mentioned, whilst the active force from without might be increased, there was also a diminution of that peculiar resistance to change which should exist within the organ.

Mr. Charles White said he had as yet no practical acquaintance with the subject of the paper, but he had been greatly interested by it, and felt strongly inclined to make a few observations for himself. He should, therefore, be glad if Mr. Underwood would inform him what power was the best for the examination of these bacteria; also if they had any particular method to recommend for cutting sections whether the teeth were decalcified or how they were treated. He thought that probably there were others besides himself who, if they knew how these beautiful preparations were obtained, would be encouraged to take up the subject, and without wishing to throw any doubt on the results obtained by Messrs. Underwood and Milles, he thought the more investigators there were the better.

Mr. Cunningham (Cambridge) said he had listened to the paper with great interest, and he gathered that Mr. Underwood had made no endeavour to reproduce, except in one or two instances, the experiments of Dr. Miller. He thought it would be very interesting if this could be done, so as to ascertain if a series of similar observations confirmed Dr. Miller or not. He quite agreed with a previous speaker, that what was now wanted was a few independent observers to check the results already obtained.

Mr. F. J. Bennett said there could be no doubt that Dr. Miller and Messrs. Underwood and Milles had between them done a great deal towards clearing up the connection of micrococci and bacteria with dental caries. It had been said that their investigations did not entirely explain all the facts connected with this disease, but he thought that the varying strength of the teeth had not been sufficiently taken into account. He thought a great deal depended on this; that it in a great measure accounted for the fact that certain races of mankind did not suffer from caries, not because there were not bacteria in their mouths, and not because there was not a sufficient amount of acid present, but because the teeth in such cases were made of almost a different material, a much stronger material and more perfectly formed.

In the next place he wished to remind Mr. Underwood what a grand fortune would be open to him if he could find out any organism of a lower cultivation, which, if inoculated in the way Pasteur had done, would in any way check or modify the action of the other organisms. This might seem a very absurd suggestion to make, still something similar had been done in other cases, and if by any means this could be effected with the organisms of caries, it would be a very grand thing indeed.

Mr. Arthur Underwood, being called upon by the President to reply, said: Mr. President and Gentlemen, I have to thank you for the tone which the discussion has taken, and I have also to thank you—which is not always the case in such discussions—for some excellent suggestions.

With regard to the individual speakers, I am really not called upon to answer Mr. Sewill, because I believe he agrees with me upon the point which I put forward, viz., as to the constant presence of these micro-organisms. If I may emphasize what I said at the beginning, we do not for one moment assert that they do the whole of the business, but we do assert that they play an important part, and that as regards the fact of their being present in the teeth we were the first to point that out to you in 1881.

Dr. Elliott seemed to imply that with regard to the zone of softened non-infected dentine spoken of by Dr. Miller; with regard to the production of decay in flasks; and with regard to micrococci and bacteria being different forms of the same fungi, we simply meet assertion by assertion. Now with regard to every one of these points we have not made a single assertion which is not based upon certain definite facts which we have stated in detail. With regard to the "zone," we say that, as near as we could get to the tissue which is quite hard,—and we conducted the experiment carefully and without prejudice, for we had no particular desire to find bacteria there,—we found evidence of the presence of bacteria. We picked away as much as we could of the disorganised dentine, and then, from the deepest portion of what remained, we inoculated a purified flask. In the flasks thus inoculated we got a growth of micro-organisms, and we argue from this that there must have been micro-organisms in the matter thus introduced, otherwise no such result would have followed. It cannot, therefore, be said that we have merely put forward an assertion with regard to this zone.

With regard to the artificial production of decay under septic conditions, we should be only too delighted if we could succeed in doing what Dr. Miller appears to have done; in fact, so delighted were we when we read, about a year ago, in one of Dr. Miller's papers, of what he had done, that we wrote to congratulate him and to ask him exactly how he had done it. He wrote back a very kind letter, giving us the information we had asked for, and we proceeded to repeat the experiments as nearly as we could from his description, but we could not get the same result. We placed the teeth in the mixture of saliva and bread, and did exactly as Dr. Miller directed us; but though some softening took place, it was certainly not caries. If anyone would like to investigate this point for himself we have the teeth so softened here for examination.

Then, with regard to these various organisms being only different forms or stages of growth of the same fungus, we have given you definite and detailed facts. We have implanted leptothrix, micrococcus, bacillus, and the oval and rod-shaped bacteria, each by itself, in little flasks, and they have grown and continued to grow for a very long time, and, as Mr. Milles has expressed it, they have always "bred true." The bacillus has never gone on to produce leptothrix, nor have the micrococci produced bacteria, and therefore we feel justified in asserting that these organisms are not the same thing in different stages of growth, else we should have succeeded in tracing some of these changes. So that here again we put forward a fact, and not merely an insertion.

Mr. Tomes, as usual, picked out a weak point in our paper, and one which I wish we had omitted, since it does not in the slightest degree affect the main question. But when we said that the living buccal mucous membrane was essential for the production of caries, we meant something more than the mucous membrane by itself. We meant the mucous membrane plus its secretions; we meant the conditions under which you would expect organisms to live happily together inside of or on a mucous membrane; in short, it was a short way of expressing the conditions present in the mouth. We are perfectly agreed as to its being a very unlikely thing that caries should be produced artificially out of the mouth, because there are so many conditions to re-assemble which are so very difficult to re assemble. We did not suppose for a moment that we could produce all the conditions under which caries flourishes, but we tried to reproduce as many as possible, and I think we succeeded in assembling a considerable number of them.

I think Mr. Coleman is perfectly correct in saying that it is at first sight a very curious thing that cases are not unfrequently met with in which you can trace the accession of caries in an individual to an attack of one of the exanthemata, or to pregnancy; and no doubt it would safely be concluded that the fever or the pregnancy had something to do with the caries. But you may also safely conclude that it did not produce it, else caries would be a necessary consequence of pregnancy or a fever, which we know is not the case. But we know that both in pregnancy and in the exanthemata, the mucous membrane, and the mouth generally, is brought into a condition in which very unusual secretions are produced, and thus we may have acid secretions which weaken the enamel, and thus favour the entrance of the micro-organisms, for we all agree that without some weakening of the enamel by acid nothing in the shape of caries could go on at all. It may be also that some of these diseases do directly affect the teeth; we know that they affect the skin and the hair, and in fact all the epitheliæ structures, and thus they must possibly affect the teeth. So also with regard to persons with offensive mouths who do not happen to suffer from caries. No doubt in such cases the enamel is perfect, and if the enamel is perfect no harm will result, no matter how many micrococci there may be in the mouth. There is no doubt that we all of us have abundance of micrococci in our mouths, and therefore it might be said that we ought all to have caries. But these are side issues. The main point is that the micro-organisms are invariably present in caries, and that they do effect the chief part of the change.

I must ask Mr. Milles to reply to Mr. White's very pertinent question; they are questions which we are very pleased to answer.

In reply to Dr. Cunningham, we may say that we do not look upon Dr. Miller at all in the light of an opponent, but rather as a fellow investigator. We have arrived at pretty nearly the same points. Dr. Miller thinks there is a certain amount of tissue affected beyond that invaded by the micro-organisms. I do not think so, nor does Mr. Milles, but we do not consider this a very important difference: on the other hand, we consider the presence of the micro-organisms a very important factor, and so does Dr. Miller.

With regard to Mr. F. J. Bennett's suggestion, it is no doubt a good idea, but I fear it is rather too experimental at present. I fear also that the amount of distrust now existing in the mind of the profession and of the public, when the subject of micrococci and bacteria is approached, is so great, that it would be difficult to persuade any one to be the subject of any such investigations; they would probably prefer rather to beat the micrococci that they have, than fly to others that they know not of.

In conclusion, I should like briefly to sum up what we have said. The micro-organisms are there; there is no doubt about that. The micro-organisms which are present can produce, and do produce, an acid. An acid and micro-organisms together can and do produce caries. Whether this can be imitated out of the mouth really does not much matter. It would be very satisfactory if one could produce caries out of the mouth, but this is not really necessary to establish our point.

One other thing which I should like to have no mistake about is this, that the principal portion of the acid in the mouth is produced by fermentation, and that those acids which are not so produced, and which are evanescent, are not in any way blameable with caries. The food gets lodged between the teeth, acid is formed, the enamel is destroyed, the micro-organisms invade the dentine, and the rest follows.

We have tried to cut this paper as short as we could, but, omitting the hasty expression about the mucous membrane, which was inserted inadvertently, and which gave Mr. Tomes a handle, I think we have stated our views clearly, and we are quite prepared to defend them.

I will now leave Mr. Milles to reply to Mr. White's question, and have only to add that we shall be very pleased to show you our specimens afterwards.

Mr. Milles: In reply to Mr. Charles White I may say that simply to demonstrate the presence of micro-organisms an ordinary $\frac{1}{3}$ or $\frac{1}{4}$ inch objective is sufficient ; but for more careful examination, as, for instance, for the drawing of these diagrams, we have used principally a 1 inch oil immersion lens by Powell & Lealand, with an angle of aperture 1·43°. We have also occasionally made use of of a $\frac{1}{25}$-inch by the same makers, borrowed from Mr. Nelson.

As to the method of obtaining our sections. The teeth are softened sometimes in chromic acid ,sometimes in hydrochloric, and sometimes in mixtures of the two. We have tried various other methods with varying success, but chromic and hydrochloric acids seem to do best. When softened by the acids we put the tooth in a solution of gum, or gum and syrup, and use Swift's Freezing Microtome for making the sections. In some instances we have made sections right through the tooth, but it is not really necessary to make such large ones ; you can generally get thinner sections if you only take part of the tooth where the caries exists, with a small portion of the healthy tissue beyond. Finally, the section is stained with some aniline dye,—gentian violet or methyl violet,—in the usual manner.

A vote of thanks to Dr. Bellisario and to Messrs. Underwood and Milles having been proposed and carried with much applause, the President announced that at the next meeting, on May 5th, a paper would be read by M. E. G. Betts, entitled, "Observations on the Teeth of certain Rodents," and the Society then adjourned.

After the meeting Mr. Lloyd Williams exhibited an electric mallet, differing from that generally used, in that the current was made and broken, and the strength of the blows regulated, by pressing on or releasing a spring pedal lever, instead of by means of the usual arrangement in the hand piece.

Messrs. Underwood and Milles also exhibited their apparatus and microscopical specimens, and explained the details of their experiment.

BRITISH DENTAL ASSOCIATION.

WESTERN BRANCH.)

The sixth annual meeting will be held at the Bath Saloon, Torquay, on Saturday, 2nd August, 1884. The order of proceedings will be as follows :—

10.30 a.m. Council Meeting.

11.30 a.m. General Meeting of Members for the transaction of business. President's address. Reading and discussion of papers.

2 p.m. Adjournment for luncheon; and at

3 p.m. The business of the meeting will be resumed.

Demonstrations will also be given, and there will be an exhibition of models, dental appliances, instruments, &c.

7 p.m. Dinner at the Imperial Hotel. Early application for tickets is requested to the Local Hon. Secs.—Messrs. Pearman and Youngman, 4, Park Place, Torquay.

Gentlemen desirous of becoming members, should apply to the Hon. Sec. of the branch, Henry B. Mason, 3, Bedford Circus, Exeter. Objects of interest in Torquay and neighbourhood are Kent's Cavern, the Museum of the Torquay Natural History Society, and the Watcombe Terra Cotta Pottery.

APPOINTMENTS.

Mr. S. Tewthwaite, L.D. S.R.C.S.T., has been appointed Honorary Dental Surgeon to the Hoxton Dispensary, Blackpool.

Mr. Edward W. Keatinge, L.D.S.R.C.S., has been appointed Honorary Dental Surgeon to the Denbighshire Infirmary.

Mr. J Wilson Fort, L.D.S.R.C.S. Eng., has been appointed Honorary Dental Surgeon to the Lancaster Infirmary.

Correspondence.

To the Editor of the "British Journal of Dental Science."

Sir,—In the May issue of your Journal, page 152, under title "Income of American Dentists," viz.: A trans-Atlantic writer gives as average incomes: Small country towns, from three hundred to four hundred a year, in a populous country town twice this; while in cities, incomes range from twelve hundred to six thousand a year in the case of the successful fashionable dentist.

The above, in reference to the cities, is not a fair average. The writer of the above does not explain whether these amounts are in dollars or pounds, but be it pounds, I think he is quite out of the way. In New York city alone, we have several dentists whose incomes are over two hundred thousand a year; a better or more accurate average would be about sixty thousand dollars a year.

Yours, &c.,

Balto, Ma., June 23, 1884. Wm. A. Mills, D.D.S.

British Journal of Dental Science.

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GOLD RESTORATION OF ABRADED DENTURES.

By E. Parmly Brown, D.D.S., Flushing, N. Y.*

Mechanical abrasion, assisted by chemical erosion of the human teeth, is fast drawing its victims to a condition of helplessness, so far as ability to properly perform the important operation of masticating the food is concerned. We hear and perhaps know of cases where a ripe old age is attained where edentulousness has existed for a score or two of years ; but investigation would surely prove that these cases are exceptions to the rule of loss of teeth—loss of life—unless artificial dentures replace the loss, and then a large percentage of substitutes for the natural organs only partially supplies the organs of nature.

"Diamond cuts diamond" is the general principle that underlies the mechanical abrasion, and when spots of dentine are exposed the surface is softened or decalcified if acids are sufficiently present in the mouth, either in the secretions, the gums, or taken in food or drink—then the mastication removes the softened surface, only awaiting another chemical assistance to repeat the operation of destruction, slowly but surely dragging the victims to an untimely grave—for this manner of losing the teeth is less apt to be remedied by the substitution of artificial ones, before it is too late, as the process is so much more gradual and less painful than when the teeth are seriously attacked by caries and neglected to the critical point of being lost. The victim, year after year calls forth less saliva to mix with the food, which prepares it for digestion, grinds the food less perfectly, until the teeth worn down to the points of the gum, make the operation of chewing so painful that it is, in extreme cases, not done at all, taking into consideration the pain produced by the ends of the canaliculi being kept open by the wear—thereby, in some cases, adding the pain resulting from mastication, and also the pain produced by acids.

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*A paper read before The State Dental Society of New York

Until cohesive gold became properly handled, no remedy was known for this unfortunate condition of the teeth of mankind. Taking into consideration the fact that the operation of extracting a mouth full of such firmly set roots was one to be dreaded, and generally put off from year to year, until the health of the patient was so impaired as to make life miserable, if not materially to shorten it.

The vital statistics of a savage island in the Pacific tell us that old age there, is forty-five years, and that the natives actually die gradually of starvation, by feeding on roots to a great extent, thereby wearing the teeth entirely away. And in about the same condition is the Esquimaux, who tans his dog-harness and his moose-hide straps for his harpoons, by chewing them for weeks.

The habit of grinding the teeth together during the hours of sleep, or while awake, is, I think, the only other extensive cause of the subject of this paper. The loss by decay and extraction of many of the back teeth accelerates the process of wearing away, but the remedy is now at hand and the sooner taken the better. Crowns of cohesive gold built upon the teeth that require it, or upon all the teeth where all are worn, lengthening them from a thirty-second to three-sixteenths of an inch, according as the wear has progressed or the mouth requires opening to its normal position, in some cases relieving a distress occasioned by the want of contact of the jaws.

The time has arrived in the dental profession, well organized as it is to-day in our country, well equiped and well educated, when the wearing away of the teeth of the people should be stopped. At the present time our art gives us golden caps to check the advance of the ravaging foe. We are working in the present! The past and its lessons we have profited by to make the present as perfect as it is; the future will come with its dazzling improvements only in the ratio that we embrace the present, taking advantage of the harvest of knowledge we now enjoy. If we have gold, beautiful and cohesive, to place between the antagonizing precious dental pearls, let us prevent the repetition of the Kilkenny cat story, where the feline abrasion was so great that there was nothing but the cats' tails left, which gave the rats a chance to gnaw the master out of house and home—let us prevent the abrasion of the teeth of man, until nothing but the roots are left, that the rats of disease and hunger may not gnaw him out of his earthly tenement before the full allotment of his years is completed, by inability to masticate his food, or consequent dyspeptic ravages.

The people want it done, and only want the proffered helping hand that says "I'll do it." He who can place gold in cavities of decay, and does it on the principle of that gold uniting by cohesion, and meets with a fair measure of success, can, with less labour and vexation, lengthen the abraded teeth to stop their destruction.

The principles on which such crowns are to be attached may require drawings, models, or actual clinics, to most clearly illustrate the minutiæ of their workings ; but it may not be out of place in such a paper to remark that like other valuable ends attained in contour work with cohesive gold, equally good results may be attained by different skilful hands with the use of a variety of modes of operating. One may with hand pressure condense the gold to make success—another with automatic mallet—another with electric mallet or other good condenser, propelled by power outside of his personal motion or force ; or the operator may find in one case that the hand mallet is the best suited to its peculiarities—while in another case, involving extensive condensation of gold, that the electric mallet facilities his work and lightens his labor. The hand pressure advocate may go on in his old rut, from force of habit, not having learned or convinced himself that a better method is extant for much of his work—just as the old farmer took the round-about, circuitous road to his home from town, years after a new road was cut, making him an hour nearer home—he was a penny wise only in not taking the newspaper—he was a pound foolish in not visiting among his neighbours and getting the news. All of us can look back and profit by the lessons of the past, seeing where we might have profited more by adopting many valuable aids and principles, of which we slowly comprehended the worth, or indifferently instructed ourselves in them. The present is but a continuation of the past, and the future will soon be present and quickly past. Let us reduce the ratio of our regrets, as time unfolds its pages to our view, by remembering that no one of us has all the good things that are to be had, that might be valuable every day and hour in practice. So it is with the principle of retaining these gold crowns or caps in their positions on the teeth after the proper condensation of gold. Different methods prevail, and in exceptional cases a variety of means of retaining may be proper in a single mouth—but for a rule of practice there must be a best way to perform these operations, and on this ground the battle will be fought until the right has gained the victory and rules. There are but three distinct ways of producing the desired effect, and these used seperately or in combination, in case of living pulp. First, screws inserted into tooth at a safe distance from the enamel and pulp ; second, a groove cut around the pulp, and as much inside enamel as best suited to the case ; third, a number of retaining pits drilled just inside of the enamel, and safely away from pulp, with some concavity in centre of crown, if possible, and a beveling of enamel margins from twenty to thirty degrees ; pits from four to ten in number, as may be required, with counter-sinking and enlarging their bases to strengthen and retain the gold—pits as large as possible without encroaching too near enamel and pulp, and deep enough, according to their size, to retain gold properly—in these pits small pieces of gold should be very thoroughly impacted with a decided force and a small pointed plugger. This preparation of crowns I prefer to the groove system, as a blue line may appear in many cases around the gold from the continuous gold reflecting through, and the force of filling the groove with gold may crack or slab off the enamel of delicate teeth. The pit system requiring less time to prepare and less pain to the patient, as less tooth material is removed. A system of pits and screws combined would be preferable to the groove plan, but the pits alone in most cases will answer, if the dentist is not supplied with screws and skilful in their use. Fifteen crowns were, with pits alone, inserted by the writer, in a gentleman's mouth, on the deck of the steamer which took the bulk of Amercan dentists to London last July—pulps alive—teeth lengthened about three-sixteenths of an inch—steel mallet and non-serrated pluggers—work done in steamer chair, six days to complete without dental engine to assist—rain and fog, sea air and seasickness not interfering with success in any way—with five days of continuous use of cohesive gold foil, annealed in the smoking cabin in rope form and cut up in covered box, being five books of gold or over 4,000 pieces, and not a single piece refused to cohere. For which a fee of $300 was cheerfully paid, being an average of $20 a crown, or for the six days' work $50 a day. I will state here that, after careful deliberation, I have decided to break the ice in regard to charges, and make some statements of them in this paper, which I know to be an important part of dental education, and has been considered too sacred or mercenary a matter to mention out loud in meeting, but perfectly proper to whisper to each other. I would have given much for years past to have had for reference the printed statements of definite fees from dentists of celebrity, ability and financial success—not for my own information, but to use in discussing the fee question with patients—admitting that a variation of prices would be proper with equally good work, according to location or the pecularities of the patient. Here is a dentist in the first ranks who takes his own medicine (and surely it must be good). Dr. J. W. Clowes, of New York, sat nine entire days, nearly two years ago, to have twenty-three crowns put on teeth with living pulps, and much abraded, who cheerfully draws his check for over $400 for the service rendered. No pulp disturbed—all anchored with pits as just described. Less of this work is done than is supposed, even by eminent dentists in the city of New York. Over a year ago I completed a case for a gentleman in New York, for a fee of $300 who had been begging to have it done, and in four good offices had not succeeded. One had agreed, but became faint-hearted the first tooth started with, and gave it up ; another said he could do it, but would not recommend it, as it would not stand ; another, that it could not be done ; and the fourth would do it, and could have done it well, but did not, for some reason, get the patient to let him begin. I recently exhibited a case at the Clinic at White's Depôt, in New York, where I succeeded in placing eight crowns, in this manner, on a gentleman's upper eight anterior teeth—entire work done in one day, or nine hours' work—teeth lengthened about one-eighth of an inch, roots all alive, some of them loose, which were braced with the universal screw-clamp, so that the malleting would not be painful. This rapid work, I believe, could not have been done with anything but the electro-magnetic mallet—as previous to this, with hand mallet, and nearly fifteen years' practice of building with cohesive gold, I have never succeeded in crowning but four teeth in a single day. Pulpless teeth, especially in cases of lower incisors, may require gold wire pins, trimmed the form of the channel, almost to the apex: and barbed for retention when driven home, extending above the abraded surface, to retain filling and strengthen cap.

Some diamond pointed teeth that have been so well formed and densely constructed as to wear their antagonists without being worn, can in most cases remain uncapped, the restoration being all done on the abraded teeth occluded with them.

A dentist in New York ten years ago, whose teeth had about half worn to the gum, a complete set, and free from decay, but troubling him much by contact with acid food, had the entire set of teeth extracted.

As a result of examination of crania in many museums, I will give a few. In carefully examining the classified crania in the Catacombs at Paris, where eight million human skeletons are stored, and where for half a mile the skulls are walled up on either side, held in position by the long bones being piled up like kindling-wood. I found that abrasion of the teeth has been about as common with the Parisians for a thousand years past, as it is to-day—getting dates from stone tablets—but caries of the teeth not near so prevalent as now, it being difficult, among hundreds of skulls to find one maxilla where the teeth were gone at time of death. The limestone formation on which Paris is built prevents disintegration of the osseous remains buried there, and as the city incroached upon the ancient cemeteries, the abandoned stone quarries 50 or 100 feet below the surface have been used as storehouses for this valuable collection.

Also the examination of about 3,000 crania from every part of the globe in the Hunterian Museum, London, show apparently that abrasion of the teeth is a world-wide complaint and the percentage about the same in the past as the present. Accounted for, I believe, by the nervous diseases of civilization doing at present, by the teeth being ground together, what the coarser foods of the ancients did in the process of mastication.

CLINICAL STUDIES ON THE COMPLICATIONS OF DENTITION.

By Dr. Magitot.

Under this title we shall define the various disturbances, be they local or general, connected with dentition. We have shown in several former publications that the physiological phenomena of teething may be divided into a certain number of successive periods ; we have classed these periods into five, in the following order :—Initial appearance.

1st. period of milk teeth. Eruption of twenty temporary teeth from the sixth to the thirty-second month.

2nd. period—Eruption of the four first permanent molars from the fifth to the sixth year.

3rd. period—Decay of the twenty temporary teeth and their replacement by an equal number of permanent ones from the seventh to the twelfth year.

4th. period—Eruption of the four second permanent molars from the twelfth to the thirteenth year.

5th. period—Eruption of the four last molars or wisdom teeth from the eighteenth to the twenty-fifth years.

The following table gives a general synopsis of this physiological problem: —

SYNOPTICAL TABLE OF HUMAN DENTITION.

A. TABLE OF EVOLUTION OF THE FIRST PHASE, FIRST DENTITION TEMPORARY TEETH.

Order of succession.	Period of the appearing of follicle.	Period of Teething.	Period of spontaneous decay.	Division of the totality of human dentition in 5 years.
Incisors, central inferior	65th day after conception.	7th month	7th year.	
Incisors, central superior	70th day	10th month	7½ years.	
Incisors, lateral inferior	80th day	16th month	8th year.	1st period of 20 teeth
Incisors, lateral superior	85th day	20th month		
Pre-molars inferior	......	24th month	10th year	
Pre-molars, superior	......	36th month	10½ years	
Molars, inferior	......	28th month	11th year	
Molars, superior	From the 85th to 100th day	20th month	11½ years	
Canine, inferior Canine, superior	......	From 30th to 35th month	12th year	

Total..................20 Teeth.

B. TABLE OF THE EVOLUTION OF THE SECOND PHASE, SECOND DENTITION PERMANENT TEETH.

First molars, inferior	Towards 90th day after conception.	From 5th to 6th year		2nd period 4th week
First molars, superior	100th day ditto			
Incisors, cen. inferior				
Incisors, cen. superior	......	7th year.		
Incisors, lateral inferior				
Incisors, lateral superior	......	8½ years		
First premolar, inferior	......	9th to 12th year		3rd period 20 teeth
First premolars superior	From 110th to 120th day			
Second pre-mol. inferior		11th year		
Second pre-mol. superior				
Canine inferior	......	11th to 12th year		
Canine superior				
Second molars inferior.	Towards 3rd month	12th to 13th year		4th period 4 teeth
Second molars superior				
Third molars inferior				
Third molars superior	3rd year.	18 to 25		5th period 4 teeth

Total......32 Teeth Total...52 Teeth.

These five periods, or more correctly these five teethings, thus follow in their appearance in invariable physiological order.

and the new division, on the utility of which we have already insisted more than once, is of the utmost importance from the point of view of the study of the complications now under consideration. It has been elsewhere adopted by several authors, and M. Parrot, amongst others, has made it completely his own. It will be seen at once how essentially it differs from the ideas accepted by the majority of medical men who consider only these pathological disturbances which accompany the dentition as alone sympathetic of first teething while they confound under the single term of second dentition, the four periods which succeed. Such a distinction is only true in regard to the deciduous character of the first teeth and the permanence of the others. We shall not insist at any further length upon this point, which has been discussed fully elsewhere.

1st. Complications of the first period:—Disturbances connected with the eruption of milk teeth.

To trace the history of the accessories of first dentition is impossible in this place, for it would be necessary to pass under review all medical literature from the books of Hippocrates up to the last treatise on infantile pathology. We will confine ourselves, then, to a *resumé* of the principal theories ventilated on this subject. It is well known that the first period with men as with other animals, is frequently disturbed by morbid manifestations of various kinds. Sometimes these are inflammatory affections localised in the mouth—these are rare—sometimes they appear at points more or less distant; occasionally, disturbances in the digestive organs; catarrhal symptoms of the respiratory tract or affections of the nervous centres appear.

Most of the authors of our works on internal pathology, and above all on infantile pathology, consider the period of teething of the newly-born infant so critical a phase as to be responsible for most if not all such ailments, embracing alike the simplest and gravest that can attack the newly-born.

Hunter, certainly, amongst these writers is the one who has given, by the authority of his name and special studies, the greatest weight to this belief, and his conviction rests on this simple fact, viz., that these disturbances ordinarily cease after the cutting of the milk teeth, and therefore cannot be imputed to any other cause.

The local disturbances of the mouth or neighbouring regions and more remote affections have for him no other origin. There are even certain forms of mucous discharge with little girls and little boys which are allied, according to him with dentition. Hunter does not give to the remainder of these disturbances any patho-genesis or mechanism, and the simple coincidence of the facts takes the place of further explanation.

All writers, who, following his example, have adopted this doctrine, have ventilated his idea that dentition, without being itself a pathological state, ought to be classed, under certain circumstances, with pregnancy for instance, and be considered responsible like it, for an indefinite series of morbid manifestations. Thus taught Joseph Franck, who has invented the word *dysodontiasis* (difficult teething), Rillet and Barthez, Dugès, Billard, Guèrsant, Valleix, the authors of the compendium, Baumes (of Montpellier), Bouchut, etc. Starting from a preconceived opinion authors have invented a morbid square, comprehending what they call the maladies of first dentition. These maladies are divided in the following manner:—

1. Local affections, salivation, swelling of the alveolar process, redness of the cheeks, aphthous stomatitis, ulcerative and aphthous patches on the mucous membrane; inflammation of the glands beneath the jaw.

2. Sympathetic ailments, convulsions, mucous discharges, conjunctivitis, enteritis, colitis.

3. Ailments without apparent lesions, vomitings, serous or diarrhœtic discharges.

Thus as they see it, the whole of infantile pathology springs from this one cause; the cutting of twenty milk teeth.

We accept at once the fact that this period of the first cutting of the teeth, which extends over the first three years of life, is frequently contemporaneous with the morbid derangements just pointed out, but contemporaneousness does not imply causality, and it must not be lost sight of, that at this same period of early infancy, there are other organs, besides the teeth which are developing. Why have not these organs been criminated as well as the teeth? The answer is this:—Teething is an exterior and visible phenomenon; any moment an infant comes under observation, there is pretty sure to be a tooth either on the eve of appearing or having just forced its way through the gum; the doctor, as well as the parents themselves, find an explanation ready to hand which requires no further research or examination. Nor do objections, though of the most serious nature, present themselves to the mind, as for instance: 1. Why should these occurrences be confined to this first phase, when from a physiological point of view it would be much less likely to generate local disorders, since the first teeth appear without traumatism of any kind on the virgin germs quite free from any obstacles.

1. Note:—This complete absence of traumatism is a fact abundantly demonstrated contrary to the general opinion of authors, who suppose that the tooth to force an opening in the layer of mucous membrane penetrates a puncture or wound even, but this is contrary to all physiological observation. The slow and gradual coming forth of the crown is secured by the formation of the root and by the concomitant resorption of the gingival tissue. Neither redness nor tearing of any sort is observable, and infants do not really suffer from the teeth if people could prevail upon themselves to believe it. Salivation, which is experienced so often by the newly born, is not necessarily allied to this phenomenon and is met with quite as frequently at other periods as teething.

2. How will they establish this intervention when the ordinary occurrences attributable to first dentition present themselves either before the appearance of teeth or after the achievement of the process?

3. How explain the lesions of follicles more or less grave, so often observed in the course of teething (viz., abscess et cœt) have been the cause of so-called maladies of dentition?

4. How explain that experiments upon animals, wounds of the follicles, lesions of the gum, etc., have not produced the same results?

5. How is it possible to attribute to dentition the morbid disturbances observable in the early growth of most domestic animals—ailments, which are in all respects, analogous to those of man, when cutting of the first teeth is finished and consequently must have nothing to do with it?

These remarks have already struck several authors who have started doubts touching the reality of the ailments of first dentition. Among these we may cite Rosen, Andral and Trousseau himself, who prescribed with regard to the subject wise limitations. Tomes, whose opinions has great weight on this point, arrives at a conclusion equally uncertain. A long time ago, Serres protested against the assertion of Sydenham, who, attributing to dentition the appearance of fever and of various kinds of ailments in young children declared at the same time his ability to cure them with a few drops of spirit of hart's horn. He opposed the opinion of Boerhaave, who in describing the convulsions of teething pretended similarly to cure them with sal volitile. "We must admit," adds Serres, "that the ailments spring from quite another cause than teething."

As to such authors, who accept this cause, it will be necessary to ascertain to what expedients they have recourse, to explain the pathogenesis of these disturbances. Some, like Guersant and Monneret, resort to the phenomena of conjestion of the brain under the influence of teething ; others consider inflammation of the gums as the starting point, although no observation will enable them to verify the fact ; while others accept simple irritation of dentition as the cause of these reflex phenomena.

However great may be the facility with which reflex actions appear in the infant, we have at least a right to claim for their production an initial lesion, however slight it may be. Such hypotheses are in reality very weak and improbable. We will not now pause to discuss these, but limit ourselves to cite some facts, on which, not only our doubts upon the reality of the ailments said to proceed from first dentition, rest, but our conviction. that these are attributable to quite a different cause.

Now we must repeat that the greater number of observations published by authors, even the most assured fail to establish rigorously the relation of cause and effect between the cutting of a tooth and the ailments which are attributed to it.

We will go further and submit that observation of disturbances attached directly to dentition has shown that they are absolutely foreign to it. M. Lévêque has cited two instances which are altogether conclusive. We will, moreover, recall examples already numerous, of serious ailments which occur in connexion with the gums or the follicles during the process of evolution, example in which they have not noted any disturbance, though at the time they must have foreseen their imminent approach ; such are the facts cited by M.M. Masse, Guéniot, and by ourselves.

To be continued.

OBSERVATIONS ON THE TEETH OF CERTAIN RODENTS.

By E. G. Betts, M.R.C.S. and L.D.S. Eng. *

Mr. President and Gentlemen,—Although the subject that I have to bring before you to-night is of no practical importance to us in the practice of our art, yet I trust it will not be without interest to you and the members of this Society, as furnishing a small addition to our knowledge of facts in Comparative Odontology, the advance of which science we all have so much at heart, and which now and again helps us so greatly to comprehend the obscure phenomena of human dental physiology and pathology.

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* A paper read before the Odontological Society of Great Britain.

Among the problems which remain doubtful in the field of Comparative Dental Anatomy, is one with regard to the disposal of enamel on the incisors of certain rodents, viz., the Leporidæ, a family which includes the hares, rabbits, and calling hares, or picas (Lagomys). It has been stated by a German naturalist, Professor Hilgendorff, and by several authors,—whether repeated on his authority or independently I do not know,—that the incisors of hares differ from those of other rodents in having enamel continued all round them, instead of being limited to the anterior surface, though this layer is exceedingly thin on the back of the tooth.

Now this layer is so thin and apparently structureless, even under a high magnifying power, that it is quite impossible to decide from its mere appearance what its nature may be.

This question, though at first sight of but little importance, is not without its bearing upon natural history. The order Rodentia, though consisting for the most part of very small animals, the largest not exceeding the size of a small sheep, and the guinea pig representing a fair average, yet from the large number and diversity of the species which it contains, is an exceedingly interesting and well-marked one. In most other orders of mammals it is difficult to frame a general description which shall satisfactorily embrace all types of the order, and species are found so divergent in many respects from its characteristic representatives as to cause it to merge almost imperceptibly into other orders.

This, however, is by no means the case with rodents; although there are tree rodents, water rodents, (or at least amphibious), flying rodents, burrowing rodents, and with extremely different external appearance, yet when one comes to examine them more closely, they are found to exhibit such a marked common specialisation that whilst the tyro could scarcely fail to recognise a member of the order, the most accomplished naturalists have differed in assigning to them their correct position in the animal kingdom. As is always the case in such a difficulty, search is made for some family of the order which seems less highly specialised, and which exhibits some divergent characters which may form a clue to the affinities of the order with others. In such inquiries it is remarkable how often and how largely the organs with which we have most to do assist in solving the problem, and this is very markedly the case with regard to rodents.

All naturalists have agreed that the Leporidæ are peculiar among rodents, and turn towards them for the divergencies which shall help them in their work of classification. Professor Gervais, a great French authority, has given the Leporidæ a sub-order to themselves. All other rodents he groups together as Simplicidents, or simple-toothed, whilst the hares, rabbits, and picas, or calling hares (Lagomys), he places by themselves under the name of Duplicidents, the former having but two incisors in each jaw, whilst the latter three groups have a second pair in the upper jaw, though these are very small, and so placed as to be of little apparent use in the economy of their possessors. This classification has been adopted by Alston, Dallas, and others.

The following are some of the particulars in which the Leporidæ differ from the ordinary rodent type. With regard to the teeth, the incisors, though large, are decidedly shorter than in other rodents—that is to say, they are less deeply implanted; for whilst in many rodents the open growing extremity of the lower incisors is placed far under the molars, and even posterior to the last molar, in the hare it reaches only to the first molar, and the upper tooth is correspondingly short. There is, as stated above, a second pair of incisors immediately behind the upper working pair, and in the newly born animal, a third pair, which are milk teeth, is present, but these latter are quickly shed. The enamel upon these teeth is white, never pigmented (Waterhouse), and is actually and relatively much thinner than in other rodents, and microscopically it does not exhibit the double layer caused by different direction of enamel prisms, so characteristic of this tissue in all other rodents.

Table showing the actual and relative thickness of the enamel on the teeth of different species of Rodents.

Rabbit	$\frac{1}{500}$	about	$\frac{1}{30}$
Hare	$\frac{1}{400}$	,,	$\frac{1}{30}$
Lagomys	$\frac{1}{160}$	,,	$\frac{1}{8}$
Marmot	$\frac{1}{100}$	,,	$\frac{1}{100}$
Guinea Pig	$\frac{1}{250}$	,,	$\frac{1}{17}$
Agouti	$\frac{1}{100}$	,,	$\frac{1}{13}$
Copybara	$\frac{1}{115}$	,,	$\frac{1}{25}$
Beaver	$\frac{1}{140}$	,,	$\frac{1}{35}$
Coypu	$\frac{1}{50}$	,,	$\frac{1}{19}$
Porcupine	$\frac{1}{100}$	,,	$\frac{1}{12}$
Chinchilla	$\frac{3}{50}$	,,	$\frac{1}{10}$
Hydromys	$\frac{1}{100}$	,,	$\frac{1}{7}$
Field mouse	$\frac{1}{200}$	,,	$\frac{1}{6}$
Brown rat	$\frac{1}{200}$	,,	$\frac{1}{26}$

The difference in thickness I think very worthy of notice, and have prepared a table showing the actual and relative thickness of enamel in a number of species. The relative thickness, as stated in this table, however, is open to fallacy, as I have compared the thickness of the enamel with the antero-posterior diameter of the tooth, and some rodent incisors are laterally compressed, whilst others are greater in the transverse measurement ; this, however, does not materially affect the general object of the table, viz., to show the comparative thinness of the enamel in Leporidæ. This family also possesses a larger numbers of molars and premolars—six in the upper and five in the lower maxilla on either side; the usual complement being three, four, and in one case, the Australian water rat (Hydromys), only two.

The crania of Leporidæ differ in several respects, and the jaws have more lateral play, those of other rodents being almost entirely confined by the antero-posterior elongation of the glenoid cavity, to a backward and forward motion.

Leporidæ possess very imperfect clavicles, whilst most rodents have well-developed ones ; this is a marked divergence, the presence of a clavicle having relation to the use of the forearm as a means of conveying food to the mouth, after the manner of a hand.

Finally, Leporidæ are almost exclusively herbivorous ; hence the greater length, volume and complexity of the cœcum, the lateral play of the jaws, &c.

It will thus be seen that there is ample reason for looking upon Leporidæ as an aberrant type of rodents, and it would round matters off nicely, and be an appropriate finish, if it could be proved that the enamel of their incisors possessed, in common with most other mammals, a complete investment of enamel. This is the matter to which I have been devoting my attention for the past few months, but unfortunately the evidence that I have been able to collect points in the opposite direction, and I think you will agree with me, when I have laid it before you, in pronouncing that no complete investment of enamel exist. At the same time I think this need not be in the least a discouragement to naturalists in their theory, as the very difficulty of speaking with certainty on this point, and of demonstrating it, is but one more fact in the chain of evidence to support the claim of the Leporidæ to being the family of rodents most nearly related to the rodents' "missing link."

(To be continued.)

MEETING OF THE AMERICAN DENTAL SOCIETY OF EUROPE.—The Annual Meeting of the American Dental Society of Europe, will take place at Vevey, Switzerland, on the 26th, 27th, and 28th inst.

DENTAL PERIOSTITIS.*

By E. F. SAMPLE, DAYTON, OHIO.

PERHAPS no pathological condtion with which the dentist has to deal, is so frequent and so distressing as the one forming the subject of this paper.

It is, as the name implies, an inflammation of that delicate and highly vascular membrane, the periosteum, which lines the sockets and invests the roots of teeth.

In degree, extent, and location, it exhibits a variety of manifestations, from the mildest to the most intense.

Sometimes the pain, even under percussion, is slight, or perhaps it can only be detected by lateral pressure, on a given point, and in a given direction.

At times, the membrane is inflamed, the tooth elongated. The gums are tumified and swollen ; the tooth is loose ; the slightest touch by the instrument of the operator, or tongue of the patient, gives the sufferer an impression that the "end of the world has come." If. in this stage, the victim closes his jaws the effects are best described in the language of an Irish soldier : "Docthur, whin I jist shut me two jaws thegither, yees would tink I had two thrashing machines inside me hed ;" or, to use the beautiful figure of Dr. Taft, in his article on sensitive dentine, in his work on "Operative Dentistry :" "Sometimes the pain is fixed at a uniform pitch, and again it passes through the entire gamut of torture up to the most acute anguish."

One other peculiarity is, its periodicity. Many cases are more severe in the morning, gradually growing less violent toward noon, and cease entirely during the afternoon, only to repeat the some round the following day. In other cases the evening is the period of greatest suffering, while there is but little if any during the day.

The pain and inconvenience are not the greatest evils, for if not arrested, it will, in most cases, terminate in alveolar abscess ; or, what is worse, in a chronic state of inflammation, during which, exostosis is sure to supervene, and sooner or later, the tooth fall a prey to the ravages of this affection.

The causes of periostitis are as many and varied as its manifestations.

For the sake of clearness and convenience let us divide them into two classes. Those of the first class, we will call "*mechanical*," and those belonging to the second class, "*systemic*." Bearing in mind that these divisions are more or less arbitrary, let us now consider a few causes of the first or mechanical kind.

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*Read before the Ohio State Dental Society

Prominent in this connection, I mention fillings, which, by the carelessness of the operator, have been left too full, or which, by the natural wear on the surrounding tooth substance, have become so prominent, that at every occlusion greater pressure comes upon the filling than upon the tooth. This is the most frequent cause, and every dentist should examine the surface of fillings, and if this condition exists, should be removed, by reducing the filling.

Clasps, to keep artificial teeth in place, often give rise to this affection. The use of wooden toothpicks has done much to produce this trouble.

Some time since, a patient complained that his teeth were all tender and giving him great annoyance. An examination revealed that the festoon of gum between the necks of the teeth was entirely absorbed. I enquired if he was not in the habit of using wooden picks, to which he replied in the affirmative. The substitution of quill picks effected a cure in a few months, although the gums have not wholly, and probably never will, return to their normal condition. Again, the crushing of hard substances, as nuts, candy, etc., are exciting causes.

If we add the alternating of hot and cold drinks, dead pulps, careless malleting, inflammation sometimes necessarily produced, the rubber dam during operations, we do not lack for data to account for the frequency of this affection. Although we have considered only a few of the causes of the first kind, that while I briefly enumerate a few of the "systemic" conditions which give rise to this disease, you will agree that they are equally as potent in producing periostitis. The more we understand the human system, the more will we be convinced that it is one complete whole. No matter at what point we begin our investigations, we shall, sooner or later, arrive at the point of departure; and he, who would be a specialist, will only be successful in so far as he comprehends this inter-dependence. No organ of the body can suffer for any length of time without, to some extent, affecting the health of all the rest. "Long continued illness, which by lessening the vital force, disturbing the processes of nutrition, and thus impoverishing the teeth and surrounding tissues, leaving them in an irritable condition, is often a cause of periostial inflammation."

One of the worst cases we ever had was that of a gentleman who had just recovered from a long and serious attack of brain fever. The careless or accidental effects of arsenious acids, used to devitalize pulps, is another prominent systemic cause.

I have seen so much of the baneful effects of this drug—

even in the hands of skilful and experienced dentists—that I have come to look upon its use with the same feeling with which one of our most experienced physicians administered chloroform, " with fear and trembling." And if the skilful have difficulty in using it, what misery the careless, the inexperienced, or the charlatan, may inflict upon the hapless victims. Pardon me for an incident :

Years since, a lady requested an examination of her teeth. Investigation revealed the following : The entire alveolar process, between the left superior cuspid and first molar, for two-thirds of the distance from the necks to the ends of the roots, was necrosed. The teeth also were loose—a foul odor was caused by a sanious discharge from the dead bone. There was acute periostitis of all the teeth on that side as far forward as the median line. The patient was wan and haggard, and complained of a dull, heavy pain at the base of the brain, and of an itching, burning, gnawing pain in the whole left superior maxilla. Said she could neither eat or sleep with comfort. Life had become a burden, and in the evening she was fain to cry, " would to God it were morning," and in the morning, " would to God it were evening."

The history of this case was as follows : Some months before she had consulted a dentist. He informed her that she had two bare nerves, and that they would have to be " killed," which he did by the usual means. Then dismissed her to call again in one week. Prevented by illness, she did not return for ten days, at which time she was suffering very much from a burning pain in that side of her face. Upon mentioning this fact the dentist at once began to berate her for not having returned at the proper time, telling her she had " poisoned " herself. And now comes the recital, which reveals the cause of that contempt, which is so often showered upon our heads, on account of the sins committed by the dead beats who are far too numerous in our profession. He proceeded to take out a part of the pulp, stuff in a pedget of cotton, saturated with creosote, and fill the cavities, collect three dollars and remark that " it would be all right in a few days." The pain continuing to grow worse, she returned to him. A little iodine, a smile, and she was again dismissed with the assurance that " such things often happened, and it would certainly soon cease to trouble her." Again and again did she return, and as often did he temporize, until at last, seeming conscious of the fact that he had aroused a spirit which " would not down at his bidding," he told her he " could do nothing more for her, she had better go to some physician."

And yet this man called himself a *dentist*. And yet there are those, even among ourselves, who cry out against every effort which would require that a man who enters a profession which has so much to do with the health and happiness of mankind as ours, shall be properly qualified. Mistakes are the common heritage of us all. But to ignorantly or carelessly inflict misery upon our fellow-beings, while professing to alleviate their physical woes, is a crime. Well might we utter the words of Carlyle to his class, "O, my brother! be not thou a quack, for cursed is that trade, and the seeds of it springeth up, thou knowest not how, long after thou art dead, to curse mankind." Of course this was an aggravated case, and yet a careful diagnosis of many of those persistent cases which baffle all our efforts, would, I believe, reveal the fact that, at some period, this drug had entered upon its work of death. I have often noticed that persons who have been salivated are liable to frequent and most painful attacks of periostitis.

Mrs. E———, a lady who had been repeatedly salivated, suffered at times most excruciating pain. At such periods all the ordinary symptoms of mercurial disturbance were observable, and all efforts to relieve the distress seemed unavailing.

Many of the worst cases are traceable to catarrhal inflammation of the antrum. Hardly a week passes during the winter and spring months that we are not called upon to account for a tender and sometimes aching condition of the superior molars and bicuspids, and in most cases it is clearly traceable to this condition.

We have, at times, suffered so much ourselves from this cause that it has made us unusually watchful for its indications. And finally, though by no means least, we mention *Secondary Syphilis.*

Shakespeare, in his drama of Julius Cæsar, gives us a picture of Brutus lying asleep in his tent before Sardis. His conscience is ill at ease, owing to his late participation in the assassination of Cæsar, his sleep is troubled. Suddenly an apparition appears. Starting to his feet, he cries out, "Who and what art thou?" And the ghost of Cæsar replies, as it passes by, "I am thy evil spirit, Brutus, and will meet thee again on the fields of Phillippi." And thus the poet would impress upon our minds the terrible power of the human conscience to inflict punishment upon the wrong-doer.

Pathologists tell us, when the virus of this dreadful scourge has entered into the human system, it can never be entirely eliminated.

True, skilful medication can do much to rob it of its power, but experience proves that at the best it is only lulled to sleep and lies like a dormant serpent awaiting only favorable conditions to leap once more into venomous activity. Nay, more, when it cannot manifest its presence in its own character like the demon who was cast out of the man in Scripture, it goeth up and down the highways of the system, seeking out the germs of all other diseases, entering into combination with them, intensifying and making them more violent and harder to be combatted than when alone. And thus having allied itself it returns to the attack, and verily "the last state of that man is worse than the first." And it is a remarkable fact that when driven from every other point it takes refuge in the tissues connected with the mouth, from whence it is almost impossible to dislodge it.

Here a wide field of investigation, sufficiently difficult and extensive to task to the uttermost the time and talents of him who will enter it ; and he who enters with wise discretion and patient efforts, will be amply rewarded in the unfolding of the secret cause, and consequent treatment of many of these obscure dental diseases which so often defy all our attempts to eradicate them.

A case : The most agonizing case of periostitis which ever came under my observation, was that of a middle aged man, who, in his youth, had contracted syphilis. The tooth affected was the first superior bicusped, left side. The cavity of decay was superficial ; and no larger than the head of a pin. And yet, for two days, the pain raged in that tooth. "Inflammation of the pulp," you say ? Yes, and also inflammation of the periostium, for after the paroxysm was over, the tooth was filled, giving evidence of a live pulp, and continued for years to do good service.

Of the *treatment* of this disease I can say but little, as the limits of this paper forbid. But if you will bear with me I will close with a few general remarks on the Treatment of Periostitis :

1st. There must be a clear understanding of the cause of the disease, in the particular case under consideration. This is fundamental—for he who knows not the cause of the disease he is combatting, is like a man groping in the dark, as liable to do mischief as to give relief. This is not always quickly or easily accomplished. But rather than go on blindly, let us temporize—palliate—do nothing, until we clearly discern the foe we are fighting.

2d. The cause having been ascertained, let it be thoroughly removed.

3d. Remember that cleanliness is a prime factor in all efforts at healing.

4th. The use of local remedies, such as iodine, cantharidal collodion, ether spray, or the following, which I often use with the happiest effect.

℞. Tinct. Aconite, two parts; Tinct. Camphor and Chloroform, of each, one part, applied to the gum.

Where the disease is a result of systemic causes, constitutional treatment in addition will often be resorted to before a cure can be effected. In such cases the dentist should prescribe such remedies as are indicated, or perhaps, what is better in the present state of dental science, refer the patient to his family physician. I am fully persuaded that we are as a rule, entirely too heroic in our methods of treatment.

It is a question worthy of attention whether the complete removal of all irritating causes coupled with cleanliness, and the use of milder remedies, would not, in the majority of cases, be equally efficacious and at the same time more humane.

DEATHS FROM ADMINISTRATION OF CHLOROFORM.—We are favoured, says the BRITISH MEDICAL JOURNAL, by Mr. Theodore Covernton, house-surgeon to the Cumberland Infirmary, Carlisle, with the following details of a death while under the influence of chloroform. The case was one of disease of the ankle-joint in a boy aged 17 ; an abscess required to be opened, and it was determined at the same time to explore the joint. Before the patient was put under chloroform the heart was examined by Mr. Covernton, and found normal. The patient took the anæsthetic easily, and breathed well during the operation, which lasted about five minutes, and involved the introduction of the finger into the joint, and the scraping away of some soft bone. Immediately the operation was over chloroform was discontinued, and for some minutes the patient seemed to be recovering steadily from its influence,when vomiting came on. The finger was introduced to clear the throat, and the tongue brought well forward with forceps. By this time the heart had failed, and although artificial respiration, electricity, and tracheotomy were in turn tried to resuscitate him, he died. The chloroform was administered by Mr. Covernton in the presence of Dr. Maclaren, the operating surgeon. The friends would not allow a *post mortem* examination. An inquest was held the following day, and the jury returned a verdict, "that the deceased died from fatal fainting caused by the administration of chloroform," and added that no blame was attributable to any one.

Reflections from the Surgery.

LATE ERUPTION OF A PERMANENT CANINE.

CASE UNDER THE CARE OF E. WHITE, L.D.S., Eng.

Reading the account of the case under the care of Mr. Nehmer, brought to my mind a case which may be of interest, and which also answer one question put as to the eruption of teeth which have been long missing.

A young lady, aged 22, came to see if anything could be done to a right upper canine, which was decayed and much discoloured; the tooth was perfectly firm and free from pain, and as the discolouration was the greatest trouble, it was determined to cut off the crown, and pivot a fresh one in its place. While preparing the root to receive the pivot, a suspicion that it was the remains of a temporary tooth came into my mind, but as everything was comfortable, the operation was proceeded with. For two years, all went on well, and then, the root became loose, and upon examination I determined to extract it—or rather, what was left of it, for the greater part was absorbed, leaving little more than a shell of dentine round the pivot. As there was no sign of a permanent tooth, a small plate was made, and worn with comfort for some twelve months, about the end of which time, I was told it did not fit, and upon my removing the plate, I found that at last the permanent tooth had put in an appearance. This is now some six months ago, I saw the case recently and found the canine was well in place, although scarcely so long as the neighbouring teeth.

British Journal of Dental Science.
LONDON, AUGUST 1, 1884.

DENTAL HYGIENE.

SECOND ARTICLE.

In rooms used by Dentists no special provision is in most cases made for the constant purification of the air. It is of importance to have several rooms *en suite* and to effect this, in lieu of having two or three lofty chambers, it is customary to sacrifice cubic space to the convenience of having three or four small adjoining rooms.

Air to be pure, should contain 20.99 per cent. by volume of oxygen, and not more than .033 per cent. of carbonic acid gas; it further should be half or three quarters saturated with watery vapor and should contain not more than a trace of ammonia.

If air deviates materially from this standard it ceases to be wholesome, and if there be a great excess of carbonic acid gas and ammonia, it becomes pestiferous. Such air indeed, instead of being the great vitalising medium takes on the part of a poison, slow in its action and for this very reason the more deadly. Air is capable of holding in suspension, just as ether holds fatty globules in suspension, watery vapor, and as the temperature of the air rises so does the air become capable of holding more watery vapor. Any excess or deficiency of this watery vapor at once affects the human frame deleteriously. In spite of this well authenticated fact, we habitually find that our dwellings are not furnished with any arrangements for supplying the watery vapor to the air.

The rate of elimination of water from the body through the skin, as insensible perspiration, and through the lungs, varies. Respired air always becomes saturated with fluid derived from the blood, hence the amount of fluid thrown off by skin and lungs becomes materially altered by the state of relative dryness or saturation of the atmospheric air. But air also holds solid particles in suspension, a motley crowd of dèbris derived from the body, the furniture, clothing and outer air. These particles consist of surface epithelium scales, fungus spores and numberless forms of micro-organisms besides dust, fluff, dried sputum, particles of food, &c. These things can be seen only too readily by careful microscopic examination of air. Let us enquire whether such unwholesomeness is likely to be found in the dental atelier? In this room, two it may be three persons, breathe during the hours of a long day. At least one of these persons has breath actually tainted by putrefactive processes which are in operation in or about carious teeth. The extent of this vitiation can be judged of by the mal odor of the breath, indeed this test was made use of by the late Dr. Parkes in his examination of barracks and the test was confirmed by a subsequent air analysis which proved it to be very accurate and trustworthy.

This air is further deficient in watery vapor. If, now, these impurities were the only morbific agents at work, we should find a source of danger sufficient to lay low the strongest man, but added to them there exist specific morbific germs. These originating in the store house of a diseased lung or larynx become disseminated throughout the air and are capable of initiating disease wherever they alight upon soil which is suitable to their development. But we propose to return to this matter hereafter.

Next in importance to the quality of the respired air is the quantity of *breathing space* required per individual. Now experiment and calculation have each shown that three thousand cubic feet of air should be allowed for each individual and should be changed at least hourly, and should be renewed without producing draughts.

For example, every 100 cubic feet of space would require changing at least thirty times an hour.

In a moderate sized room, say 15 feet square by 10 feet high, there would be over two thousand feet, and as two people would require six thousand feet of air per hour the air would have to be completely changed three times in the hour. But this does not represent the correct estimate, since a wide allowance has to be made for furniture, drapery, gas, and stoves or fires, while yet a further deduction would be requisite were a third person, as often happens, present during the sitting. According to Dr. de Chaumont, in houses which are ventilated by the ordinary means, windows, doors, gas and open fire places, at least one thousand cubic feet space is requisite per individual. It is no easy matter to grasp the idea of this space, but to do so let the length of the consulting room be multiplied into its breadth and height, and it will, we fear, be found that most of these chambers fall short of the hygienic standard.

We may now enquire into the results of this fresh air famine. When the percentage of carbonic acid gas exceeds unity, tangible symptoms arise, symptoms with which one is familiar as the result of a long day's work in a hot room—headache, general malaise, coated tongue and pungent metallic taste in the mouth. The man who works in that atmosphere is slowly but surely dying, his work is depreciated in quality, lessened in quantity and only performed by making requisition again and again of reserve stores of force; he is living with his safety valve screwed down and haply will discover, when too late, that his meridian of life has passed and his senility has come upon him ere he has barely attained his prime.

A modern writer upon hygiene well says "it does not follow because pain and discomfort are not always experienced in a vitiated atmosphere, no harm has been done."

The effects may be slowly and unperceptibly cumulative, but they are none the less injurious, and they are now recognised as being among the most potent and wide spread of all the "predisposing causes" of disease. Even before the researches of Koch confirming previous observations, showed that a micro-organism—the Bacillus Tuberculosis—was present in the sputum and lungs of phthisical patients, it was well-known that whereever overcrowding and fresh air famine were rife there phthisis pulmonalis battened. Ransome and others have now shown that the bacilli of Tuberculosis exists in large numbers in the expired air of phthisical subjects, so that the dentist who is forced to bend over his patient's face and so unavoidably inhales his breath, must perforce inhale swarms of these morbific germs. The question whether phthisis is infectious, although still contested, must at least be held in many cases to be answered in the affirmative. Wives communicate phthisis to their husbands and *vice versâ;* the employés at Hospitals and especially the clinical assistants whose duties would oblige prolonged propinquity with phthisis cases, are very liable to contract the disease.

When such considerations are borne in mind we can hardly say that the evils we have accredited to the vitiated air of dental ateliers are imaginary. Surely the picture we have brought forward is far from being highly colored, indeed, we fear it falls short of the dismal reality.

To remember the prevalence of dental decay among the strumous and phthisical is but to urge another and cogent reason for taking into grave consideration, the danger which the consulting room presents. And further this danger demands at our hands that some stringent measures should be adopted to remedy this condition of affairs.

MEETING OF THE BRITISH DENTAL ASSOCIATION.

In our last issue we published the provisional programme of the Annual Meeting of the British Dental Association. The list of subjects chosen, and the names of the writers give earnest, we may perhaps be permitted to observe, of a meeting worthy of the occasion and the promoters. The feature, which is so prominent, is the series of demonstrations. To all practical men these must prove of the highest value. It was feared that other meetings taking place elsewhere might militate against the success of the Association's meeting; but it can hardly be doubted that so interesting a programme will ensure a full attendance.

It is highly satisfactory that the appeal which appeared in the Association Journal has met with so vigorous a response.

DENTAL BENEVOLENT FUND.—An appeal is made for votes for Duncan Campbell King, aged nine years, to obtain his admission into the London Orphan Asylum at Watford. Duncan Campbell King is the eldest child of the late Octavius Barnard King, who practised for many years as a surgeon dentist, at Brecon, South Wales. His brief illness, (he succumbed to consumption,) and permature death prevented him from making any provision for his widow and five children. Proxies may be sent to Mr. O. King, at Ledbury Road, Hereford, or to the Honorary Secretary of the Dental Benevolent Fund at 40, Leicester Square. This case commends itself; we need add no word to enhance the sad, sad story, which the recommendation paper sets forth so succinctly. We may add that there are many referees from among well known names. We trust the fatherless child may not plead in vain.

DENTAL ASSOCIATION AT CAMBRIDGE.—The third annual meeting of the Eastern Counties Branch went off very satisfactorily. The measure, which we have so strenuously advocated, namely, that all medical charities should have upon their staff a proficient dental, was again brought up, but unfortunately only Bedford responded to the appeal. The question as to the advisability of making these appointment at Addinbrook and elsewhere excited some discussion. Some useful papers were read, and the usual dinner with the speechifying which is inevitable, were successfully and pleasantly got through. The meeting will be remembered as one alike pleasant and useful.

FILLING AROUND THE MARGIN OF AMALGAM FILLINGS, WITH GOLD.—Dr. Perry has according to the Dental Cosmos, had a great deal of satisfaction in filling very large cavities with amalgam, and in a few days after it has crystalized, cutting a narrow groove around the margins and filling with gold. In large approximal fillings which run under the gum, this cannot be done upon the portion of the filling covered by the gum, but it is not necessary. He did not look for early failure of amalgam fillings under the gum if they have been carefully finished. Placing the band of gold around the filling as indicated, prevents the crumbling of the edges, which, in his experience, has been the principal cause of failure in this class of fillings.

PATENT MEDICINE STAMP ACT.—A battle royal is being fought about this Act. Our contemporaries, the *Lancet*, *British Medical Journal*, and *The Chemist and Druggist*, all have leaders or letters on the subject. The act was passed in 1812, and it has suddenly occurred to the Inland Revenue Collectors to tax every drug which is prepared abroad. The result of this will be that most of the alkaloids and many useful modern remedies will become "patent medicines." Of course dentists are only indirectly affected. Where the most dangerous part of the business lies, is in the fact that as patent medicines do not come under the Poison's Act, wholesale poisoning of babies by patented stuff may occur, and practically becomes legalised.

DENTISTS AND THE ROYAL COLLEGE OF SURGEONS.—A DEPUTATION waited upon the Council of the Royal College of Surgeons of England, to request that body to take steps in the matter of an L.D.S., Eng., who has, it is alleged been guilty of unprofessional conduct. The College have taken counsel's opinion upon the matter, and acting under this inspiration, has declined to move in the matter. It is very unfortunate that the College is so powerless to restrain the vagaries of its Dental Licentiates.

Speaking of the College of Surgeons, we may add that, as there is now Associations of its Members and Fellows which are bent upon exacting reforms, it is surely time that the L.D.S.'s combine, and in a corporate body consider their relations with the College, and work for the many reforms which the regulations of the L.D.S. require.

If, it is said, that the Association occupies such a position, we can only say it is a pity that it does not bestir itself in the matter, or if there are more L.D.S.'s outside than inside its pale, we should gladly welcome the formation of a league of L.D.S.'s bent on reform, and untrammelled by an autocratic administration.

Abstracts of British & Foreign Journals.

JOURNAL OF BRITISH DENTAL ASSOCIATION.

DENTAL CARIES : A CRITICAL SUMMARY, by HENRY SEWILL, M.R.C.S., L.D.S., Eng.

MR. SEWILL at first directs attention to authority in "Matters of Scientific Opinion." He complains that even scientific observers have failed to recognise that what follows Dental Caries does not necessarily cause it. He states that most of his "fundamental facts" admit of verification by every careful student. Mr. Sewill gives his own view of what should be scientific opinion. According to Mr. Sewill, the opposing theories admit of being comprised within three categories :

1st. Those asserting caries to be a true disease, resulting from morbid action within the tissues.

2nd. Those which look for an external agency which can only act upon tissues whose vitality is impaired.

3rd. Those which teach that caries is due exclusively to external agents but maintain that the tissues, whilst disintegrating, become the seat of various vital reactions.

The first class have become obsolete, and, therefore, are passed over. Enamel being developed from the pulp which consists of epithelial cells is calcified through the vascular papillae when once formed, are cut off from all vascular connection, hence there is no possibility of nutritive changes inducing morbid states in the enamel. Similar considerations apply to the dentine, the biogenesis of which is briefly noticed. Mr. Sewill then quotes some passages from writers whose views he believes places them in the second category. After animadverting with some acerbity upon the grammatical construction of these paragraphs, he reviews their bearing upon dental caries. He believes that these views may be paraphrased. The dental tissues are probably pervaded by vital force. This force (if it really exists) is a distinct entity, which diffused through the substance of the tissues maintains their vitality and prevents their spontaneous decomposition. As we understand Mr. Sewill, he goes on to say that the enamel and dentine suffer "from diminution of this force or from abatement of some other inherent potentiality." Hence enamel and dentine become susceptible to external morbid influences. Our writer regards as astounding that any dental surgeon could look upon "vital force" as an entity or impaired vitality of the tissues as elements in the causes of caries. Physiology and pathology, Mr. Sewill avers, have long since laid the ghost called vital force. "The anatomy of a tooth, and especially of the dentine and enamel conclusively shows, that the physiological factors necessary to effect mal-nutrition or impaired vitality are such as could not possibly be brought into action, and this fact substantiates that dentine or enamel is incapable of becoming carious in the way these writers suggest. Again, it is shown, says Mr. Sewill, that any comparison which may be instituted between enamel and dentine on the one hand, and highly complex nitrogenous bodies on the other, must of course be fanciful in the extreme. The following important facts conclude this instalment of Mr. Sewill's paper : A tooth preserved for years after extraction may have its crown cut off, and then fixed by pivot to a tooth root in the mouth. In this situation the crown behaves precisely as do its neighbours which are in physiological continuity with living tissues. If it becomes carious it does so in precisely the same way and in the same situations as they do, and that the change is precisely the same in the case of the dead crown and the living teeth. Dentine has, at best, a meagre vitality, such as it has, it derives from the pulp and yet the death of the pulp does not *per se* promote dentinal caries. Premature shedding of the teeth does induce caries. We may quote Mr. Sewill's concluding sentence, in which, speaking of an adherent of the vital action school, says : "It is indeed difficult to criticise with patience a writer like this, who, not recognising his utter incompetence—literally as well as scientific—for his self imposed task, painfully sets to work at an attempt to instruct students in what after all is among the most simple of pathological problems, and succeeds only in involving in a fog of verbiage, in which nothing can be perceived but the shadow of a metaphysical bogie, good for nothing but to scare the already bewildered reader."

DEUTSCHE MONATTSCHRIFT FÜR ZAHNHEILKUNDE.

EXPANSION of the MAXILLARY ARCH, by means of Coffin's Expansion Plates by E. SCHWARTZKOPFF, of Eisemach.

THE regulating of irregularly standing teeth is a work of time and patience, both for dentist and patient, and even with the utmost patience the wished for result is not always attained.

The treatment of the irregularity of the teeth can hardly be made into a system which the beginner can learn. A sound judgement is better than all theories; and careful thought does more than any number of rules. Every individual case requires different treatment and different use of the means at hand. However we find in our dental books and papers instructions for the treatment of such teeth as are inside the arch require to be pressed outwards.

We are acquainted with the use of the inclined plane, and the pressure apparatus, we know the use of jack screws, with or without plate, &c., but apparatus is much more rare which tends to press out not only single teeth, but the whole of the jaw and even to widen the whole alveolar arch. And yet the last treatment is much simpler and will repay better, and after using Coffin's expansion treatment it will be found that the difficulties of the work have almost disappeared.

It was at the International Medical Congress in London that Coffin first made his expansion treatment widely known, for, although it had been in use for 25 years, it was till then comparatively unknown. Coffin himself, came on the method by chance. He had to get an incisor into its right place with a caoutchouc plate with little wedges. One day he observed that not only this tooth had taken the wished for position, but that other teeth which had been less irregular, were also pressed into a better position.

On inspecting the plate taken from the mouth, it was remarked that the plate through the swelling of the wooden plugs in the caoutchouc, had sprung into two symmetrical halves, and that through the tension of these halves, the extension of the arch was brought about, the stiff intact plate not having been able to attain the result wrought by the plate when separated. To this observation, Coffin owed the idea of his expansion treatment.

Putting this power under control was the chief merit of Coffin's work.

By means of a steel bent wire, the part of the plate under control is extended and forced into the desired direction.

Dr. Schwartzkopff has had many cases in which this treatment has been perfectly successful.

He says, "the preparation of this plate offers no difficulties." He uses gutta percha, but Stent's mass and plaster can be used. The bending of the wire, which should be done without heating, is not difficult, if the wire is not too strong. The ends of the wire are beaten out broadly and tinned to find a hold in the caoutchouc. The form should be serpentine, or like a W. The wax plate in which the wire is imbedded, is raised from the model and plastered in the flask. After vulcanising, the plate is polished and worn for a day or two in the mouth, then sawed through and the edges rounded and polished.

It has been said that the steel rusts easily, but, with cleanliness, that is impossible.

At the last meeting of the Central Union, at Frankfort, a letter was read from Dr. Bock, of Mürnberg, in which he spoke of numerous cases of irregularity of the teeth, which he had cured by means of Coffin's expansion plate.

The question is now raised as to whether the same result may not be attained by extracting certain teeth.

Not from a dental point of view only, but for the sake of appearance, hereditary tendencies, health and age, the question of expansion or extraction should be well ventilated.

A RARE AFTER EFFECT OF NITROUS OXIDE, by DR. KARL GOEBEL, OF KRAKAL.

THE following case which came under the hands of Dr. Karl Goebel, is, he says, the only case of the kind he has ever heard of.

On the 29th of April, a lady of about 26 years of age, accompanied by her husband, visited him, after having taken a journey of about a mile, to consult him about troublesome toothache. The patient, who looked well and healthy, had in the neck a scarcely noticeable strumous scar, and related that she had been confined three months before, and up to that time had had four sons. For two months she had been suffering from frightful toothache, and could neither eat nor sleep; she wished the tooth (the right upper wisdom tooth) to be taken out, but she feared the pain, and would only undergo it under anæsthesia.

She would not allow her mouth to be examined for the pain had ceased for a day, and she feared that any disturbance of the tooth might bring it on again. After Dr. Goebel had assured her that he would cause her no pain, he found considerable Periostitis in the tooth concerned, the gum round was somewhat swelled, and he begged her to have the tooth out. She was willing if he would anæsthetise her, but feared, she said, lest the milk should go to the brain. After he had told her that was not possible, he advised her for her own satisfaction, to consult another doctor.

She then said she would come again the next morning, and have it out, and bring some one else with her, as her husband would not be able to come.

The next day, April 30th, at a quarter to one the lady came accompanied by two other ladies. She had consulted a doctor who had often attended her, and who told she had nothing to fear. She said she would have the tooth taken out under gas, if Dr. Goebel would assure her she would feel nothing of the pain.

After he had quieted her on that point and she had been examined as to heart and lungs, by Dr. Skobel, the gas was administered, without pressure.

After the first two inhalations the patient pushed the mouth piece aside and said, I cannot bear this for I have no breath, and I shall be stifled." So the anæsthetisation was stayed for a moment, and the doctors tried to persuade the lady that it was not so bad as she thought, and to remind her that it would render the extraction painless. She then determined to inhale the gas. She had inhaled about three and a half gallons, when she suddenly became restless, the pulse slackened, and she again pushed the mouth piece aside. After that she again inhaled the gas two or three times, and became unconscious. The tooth was immediately extracted and the head inclined forwards. Just at this moment she tore the gag from her mouth, and cried despairingly, "Helen, Helen, I am mad, I have no husband—I have no children."

She was given water to rinse the mouth which she did mechanically; her face was deep red, the eyes fixed. Then she sank back on the chair. Smelling salts were held to her nose, and after a time she seemed to come to herself, looked round and called out "I am Patti," and began to sing an operatic song. After ten minutes she ceased to sing, and asked the doctors if they had heard Patti.

They then asked her some questions which she answered rightly, but immediately began to sing again. She went on singing till she appeared to be exhausted, put her hands over her face and asked if her tooth was out. She then came slowly to herself.

When asked if she knew she had sung she said "No." All this had lasted about an hour. She was very thankful to hear the tooth was gone, and thanked Dr. Goebel repeatedly.

The condition of the patient had been painful to witness. It could not be said that she was unconscious, for she sang, cried, and gesticulated with her hands, but remembered nothing of it afterwards.

The ladies who accompanied her thought she had become mad, and it was difficult to make them believe she would soon get all right.

Dr. Goebel thinks this was all caused by the intense excitement and fear of the patient.

Dr. Goebel says that laughing gas requires as much care in administration as any other anæsthetic, and that it is exceedingly foolish for a man to give it without the presence of a second person and without taking all precautionary measures.

"ON THE CAUSES OF DISPROPORTION BETWEEN THE SIZE OF THE JAW AND THE TEETH," by Dr. JULES PARREIDT, Dentist to the Surgical Policlinic of the University of Leipsic.

IRREGULARITIES of the teeth are very often seen which arise from disproportion between the size of the maxillary arch and that of the teeth. It is the duty of the dentist to rectify this disproportion as far as possible, either by extending the alveolar arch by pressure from within or by extracting some teeth which would make the required room for the remaining teeth. Such irregularities are often handed down from parents to children. A child whose parents had strongly built jaws would probably have strongly built jaws itself, whilst parents with small jaws often bequeath them to their children. If one parent has broad and the other narrow jaws the children will some inherit the broad and some the narrow. Very often the children's jaws are between the two extremes. All this happens only under normal circumstances, through disease in the first years of life the size and form of the jaw can be greatly influenced. What has been said of the jaws is true in a much greater degree of the teeth. They often show some peculiarities of the father or the mother. Brothers and sisters can often be recognised by their teeth, but as a rule they do not have teeth alike. It is very unfortunate if the child inherits the narrow jaws of the mother with the fathers broad teeth ; but the opposite case is better when narrow teeth are found in large jaws. The development of all organs is dependent in a great degree on the common nourishment of the body, but disease and deficient nourishment do not affect all parts of the body in the same degree. The jaw and teeth are very different in this respect, the jaw can gnaw during the whole time of youth, but the teeth cannot be greater nor smaller than when they were formed in the embryo. The teeth which are cut from the age of 7 to 12 years, exist in the embryo before the child is born, and after the birth, in the first three years of life, the pre-molars and second molars begin to form. The wisdom tooth, which appears in the 19th year, has been forming since the 8th year. The tooth can under no circumstances have a less breadth of dentine mass than was laid for it at the dentification. Disease and insufficient nourishment may work on the formation of the teeth, but only in diminishing the zone of the tooth bone.

As to the enamel, it can with good nourishment increase in thickness until the destruction of the enamel organ, and insufficient nourishment will cause the layer to be thinner.

Illness, too, in the first years of childhood, considerably influences the formation of enamel, and in honeycomb teeth, scarcely a trace of it is to be found on the crown.

But the layers of enamel after all change so little in thickness, that the nourishment of the body does not visibly affect the size of the teeth.

As a rule, all organs of the body which are much used are more strongly developed than parts that are allowed to remain idle ; but in this respect the teeth are an exception, for they do not increase in size by much use, although the more they are used the more firm they become.

But with the jaw bones it is different, for the laziness or disinclination of some children to chew food that requires it, and to take only soft food is one of the most frequent causes of disproportion between the jaws and the teeth.

Children should not be allowed to leave their crusts of bread, but should be made to chew them thoroughly and slowly. Very often at 3 or 4 years of age the teeth are disturbed, and the child finds difficulty in chewing and is given soft food, and so gets disinclined to use his teeth. But it is the use of the milk teeth which broadens the jaw and gives firmness to the remaining teeth. So we conclude that the influences of life only alter the size of the teeth before dentification ; but that use or disuse will enlarge or decrease the size of the jaw bone. So, as the jaw can increase in size for so much longer a period than the teeth, we see how it can come about that there is constantly so great a disproportion between the size of the jaws and that of the teeth.

INDEPENDENT PRACTITIONER.

FERMENTATION IN THE HUMAN MOUTH ; ITS RELATION TO CARIES OF THE TEETH. By DR. W. D. MILLER, Berlin.

(Continued from page 662).

If we infect a beef-extract-sugar solution with carious dentine, as described above, using perfectly pure material, and excluding access of germs from without, and keep the solution at 370° c., the following phenomena occur: In from eight to ten hours the solution will show a slight cloudiness, never amounting to complete opacity. On testing, an acid reaction will be seen to have already appeared. In 15 to 20 hours the fermentation generally reaches the most active state, and soon afterwards a colorless, flocky precipitate forms on the bottom of the vessel, accompanied by a corresponding clarifying of the solution, and a diminution of the fermentive activity. After the lapse of 48 hours the sediment will have completely formed, and the solution will be almost transparent.

The time required for the completion of this series of phenomena will depend upon the amount of dentine in the solution used.

Impurities in the culture appear as: (1) An excessive cloudiness of the liquid. (2) By the formation of a skin upon the surface of the solution. (3) The failure of the latter to become clear after the regular lapse of time, etc., etc.

Dentine is an excellent medium for separating the different fungi found in the mouth, the most of them not being able to exist in the deeper parts, partly on account of the acidity of the medium, partly on account of the lack of free oxygen. We may, therefore, with the proper amount of care, obtain material of such purity as to produce a pure culture in the first generation.

Microscopical examination shows the sediment to consist of cocci and diplococci, either single or in chains, all motionless. Under a low power they appear round and regular; with one-eighteenth oil immersion they are seen to be round or oval, regular or irregular, involuted, etc., presenting the most various shapes and sizes. Spores were not found.

We find, consequently, in a chain taken from a growing culture, some of the cocci round, others oval, some of the diplococci but slightly contracted, while in others the contraction amounts almost to a complete division. The various forms of bacteria found in cultivation experiments are then described.

If we make a large number of cultures at once we will, in about one case out of five to ten (and if the cultures are made in a decoction of malt, much more frequently), meet with a second fungus, essentially different from the one just described. It occurs chiefly in the form of bacilli, but also as leptothrix, bacteria, diplococci, and cocci singly, or, as is mostly the case, in long zigzag threads.

The discovery of this fungus, with its different forms of development, affords a very ready explanation of the fact that in a single dentinal tubule we sometimes find a transition from leptothrix to bacilli, from bacilli to bacteria, and from bacteria to cocci.

Those who maintain, as was done in the British Dental Association, that such cases may not be found, are responsible for their own mistake.

Macro-scopically, cultures of this fungus in beef-extract-sugar solution are not easily to be distinguished from artificial cultures. The fungus collects as a sediment on the bottom of the vessel.

"In order to discriminate between these two fungi, I will designate for the present the one first described by the prefix *A* (alpha), and the one under consideration by the prefix *B* (beta). In all probability the fungus also produces lactic *A* acid from sugar. I say in all probability, because, though I have always been able to detect lactic acid in cultures of this fungus, I could not say with absolute certainty that cocci and diplococci of the species *B* were not present."

There are, then, in carious dentine two distinct fungi—one always, the other often, present ; the former surely, the latter probably, producing lactic acid from sugar. If these fungi are the direct cause of dental caries, we should be able to produce caries. This Dr. Miller avers he has accomplished.

Figures are given showing side by side, tubules of dentine carious and affected by artificial erosion.

It is interesting that the fungi, themselves colorless, cause dentine to become yellowish, light brown, or dark brown, etc., depending upon the medium in which the culture is made,

The experiment is said to be attended with difficulties, and liable to fail in many cases. The necessity of repeatedly changing the solution very much increases the danger from impurities ; especially must the saccharomycetes be guarded against. The acidity of the medium caused by the caries fungi renders it very favorable for their development, and when they have once found their way into a culture it might as well be thrown away at once. Extreme acidity of the medium destroys the vitality of the fungus. In this case the dentine becomes softened, but only a slight invasion of the tubule takes place. In the last stage of caries other fungi, especially leptothrix buccalis, are present in the decomposing dentine. Is is not difficult, by a simple microscopic examination of the fluids of the mouth, as well as of carious dentine, to find forms morphologically identical with those described above.

The caries fungus agrees morphologically with the fungus of sour milk as delineated by Pastuer. Later experiments, however, render it probable that the souring of milk is produced by an altogether different fungus, a short, thick *bacterian* occurring in twos, seldom fours, which may also be found in the human mouth (though probably not deep in carious dentine).

In the case of both fungi the *fermentation* goes on independently of the presence of free oxygen. Where only a trace of oxygen is present, in no way comparable with the amount of acid produced, the degree of acidity was as great with free access of air. Dr. Miller believes that the study of the fermentation produced by fungi in dental caries shows some doubt upon Fluegge' statement that no fermentation can go on without the production of carbonic acid.

A glass vessel of five hundred c. c. capacity was filled with beef-extract-sugar solution, infected with a pure culture of caries fungi and made air-tight with a rubber stopper, carrying an efflux-tube for collecting the gas over mercury. After twenty-four hours, during which time 1.75 c. c. acid had been produced, one single gas-bubble was collected, possibly due to a slight change of temperature or to a veritable gas evolution. The change seems to be one represented by

$$C_6H_{12}O_6=2C_3H_6O_3$$

It presents a marked contrast to the butyric and alcoholic formations.

There is probably always enough sugar in the mouth to enable the fungi of caries to induce ferment action. It remains a question whether they have any diastatic action. About thirty cultures in an aqueous solution of beef-extract and starch, and in a solution of starch in sterilized saliva gave for the most part negative results ; in exceptional cases a slight diastatic action appeared to take place, which Dr. Miller thinks was the result of some impurity in the culture or an error in experiment.

The fungi appear to possess the power to render non-fermentable sugars fermentable, since cane sugar, which is not fermentable, when subjected to their action, becomes fermentable, and reduces Fehling's solution. That this is caused by the action of a ferment produced by the organisms, is demonstrated by the following experiment : By making a number of cultures at one time in vessels of two hundred to five hundred c. c. capacity, and collecting the sediment which was deposited on the bottom of the vessels, a considerable quantity of the fungi was accumulated ; this was then treated with ninety per cent. alcohol. filtered and dried in a porcelain vessel, thoroughly rubbed with sand, digested with water at

23^0C,, and re-filtered ; the filtrate (which must be clear, and should contain the ferment in solution) was added to a solution of cane sugar, which then showed, in the long tube of a Mitscherlich polariscope, a rotation equal to 5^0,19. The solution was now allowed to stand four hours at a temperature of 48^0 C. after which time it produced a rotation of only 4^0.54, indicating a decrease of about two-thirds of a degree. The solution reduces a small quantity of Fehling solution.

In the presence of the fungi the non-fermentable sugar, by the action of the invertine produced by the fungi, takes up one molecule of water and is converted into invert sugar, a mixture of levulose and dextrose, both of which are fermentable.

$$C_{12}H_{22}O_{11} \times H_2O = C_6H_{12}O_6 \times C_6H_{12}O_6.$$

Cane sugar, Celulose, Dextrose.

We may say, therefore, that the micro-organisms require sugar to produce fermentation, but that it is immaterial which kind of sugar is furnished them. The fermentation is most active between the temperatures 35^0 and 40^0C. Above 50^0 C. and below 15^0 C. little or no production of acid take place.

In addition to these two species of fungi, others of minor importance are occasionally met with in the mouth.

I would not have any one think that I look upon the above as a thorough consideration of the fungi of tooth caries.

(To be continued).

Action for Damages against a Dentist at Southampton.—A Mr. W. Bennett alleged that his daughter had sustained grievous injury through the inexpertness of a dentist, a Mr. Dalgarno assessing the damages at ten pounds. After hearing a good deal of evidence, to which another dentist, Mr. Payne, contributed, the bench decided that the operation had not been performed in a reasonably skilful manner, and so gave for the plaintiff, ordering damages to the full amount claimed. The gist of the case lay in the unfortunate removal of two teeth in lieu of the one required. This, it was urged by the defence was the misfortune and not the fault of the operator; but the view was not held by the court. It is always a matter of regret when professional men are forced into giving evidence about the proceedings of their brethren.

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

By J. William White, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

(Continued from p. 667.)

A question remains to be solved. In what proportion of frequency are dental erosions due to a heredo-syphilitic influence, in comparison with other causes capable of producing them? Unfortunately, this question is not yet answerable in the present state of our knowledge. All that we can say of it is that syphilis certainly constitutes a common cause of dental erosions. It seems to me even undeniable that it constitutes the principal cause. Dental erosions of specific origin present themselves by hundreds while these attributable to other causes are singularly limited in number. Eclampsia would certainly be claimed by M. Magitot and his partisans as having large influence. But here the influence of syphilis would reassert itself, for infantile eclampsia is often but a symptom of hereditary syphilis. Numbers of syphilitic children are afflicted with convulsions;* many die from them. Then, among these cases of dental erosion attributed in mass to eclampsia there are necessarily a certain proportion which belong in fact and by right to syphilis. However this may be, the question of relative frequence cannot at present be decided, for the materials for reliable statistics on this subject are wanting.

Another point remains for us to consider. Have all dental erosions the same semi-logical value? Should they all, to the same degree, raise the suspicion of a specific origin? It is certain that syphilis can cause them all, whatever they may be; but it appears none the less evident that it produces certain types of erosion rather than others. On this account those types will have for us a diagnostic value which others would not. Without doubt, in view of the newness of the subject, it would be imprudent to yet specify anything precise or definite in this regard. Nevertheless, we are able at present to formulate the few following propositions, as expressing the facts observed up to the present time:

First. The punctated, the cup-like, the facet-like, and the saw-like erosions of the free edge have but little or no value as evidences of a heredo-syphilitic influence, because we meet with them frequently outside of all specific heredity.

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*See Syphilis and **Marriage**.

Second. The furrow-like erosion (sulciform erosion of Parrot) is more important, but it is indisputable that we observe it with a certain frequency in conditions where syphilitic heredity can be absolutely excluded.*

Third. The atrophy of the dental cusp—notably that affecting the first molar and constituting the short, flat tooth—has a more precise meaning, because this is a favourite form of the malformation when caused by syphilis.

Fourth. But the best sign, one which can be given as an almost certain evidence of syphilitic heredity, is the semi-lunar notch of the free border—that which is called the Hutchinson *tooth.* This special form of erosion—above all when it occupies its chosen seat, viz., the superior incisors—is a diagnostic element of incontestable value.†

I cannot go so far as Hutchinson and say that this is a pathognomic sign, that this malformation of the superior central incisors suffices to prove hereditary syphilis. However, I have yet to find a single case where this sign has deceived me ; I have yet to find a single case of this dental malformation, " the cresentic notch of the free border," which has been produced by causes other than those of syphilitic heredity ; so that, if I confined myself to the results of my personal observation, I would be very much tempted to affirm the specific nature of this Hutchinson tooth. But I believe that, in a question so new, prudence is necessary, and that it would be premature to form absolute conclusions. I will confine myself then to stating the condition of our accurate knowledge on the subject at present, viz., that the semi-lunar notch of Hutchinson is a formal presumption—perhaps even a certain sign—of syphilitic heredity ; that no one has yet confronted the semiological value of this dental malformation with a single absolutely authentic contradictory observation ; but that, before giving to this valuable sign the term of " pathognomonic "—before considering it as of itself furnishing an absolute, irrefutable demonstration of syphilitic heredity—it must yet await the confirmation of a more prolonged experience.

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*In more than twenty cases I have verified the furrowed tooth in adults who have recently contracted syphilis. A short time ago, for example, I observed erosions of this nature upon a young man of twenty-five years, affected with a hard chancre several weeks old, with roseola, mucous patches, etc. In cases of this kind, the following problem is met with : Either the furrowed erosions are exclusively of syphilitic origin—and then hereditary syphilis does not constitute an immunity against later syphilitic contamination ; or the furrowed erosions are not of a syphilitic order. The last solution of this problem appears to us preferable in all respects.

†Mr. Hutchinson, with whom I had the honor of conversing upon this question, admits as "specific teeth" only the superior central incisors. According so him, every semi-lunar notch affecting the superior central incisors would be an absolute sign of syphilitic heredity. But this same lesion affecting other teeth, "would no longer have any signification relative to specific heredity." This statement seems to me unacceptable as regards its second clause. Why attribute a semiological signification to a lesion affecting certain teeth, and deny all value to this same lesion when it affects others. Why is it that that which is an absolute evidence of syphilis upon the superior central incisor becomes a dead letter on the superior lateral incisors, or upon the inferior incisors, or upon the cuspids, inasmuch as there are cases where other teeth are affected with semi-lunar notches at the same time, in the same manner, and to the same extent as the superior central incisors ? I had lately in my service just such a case, the cast of which I showed to Mr. Hutchinson without succeeding in making him change his opinion. It was the case of a young patient who presents superb semi-lunar notches (Hutchinson type) upon six teeth, viz., the two superior central incisors and the four lower incisors ; and all the notches were absolutely identical on these different teeth. Now, if we admit syphilis as the origin in the malformation of the superior central incisors, how is it to be supposed that it had no influence in the concomitant and identical malformation of the other teeth ? And, if we attribute a high diagnostic value to the malformations of the superior central incisors, why deny a like signification to the same pathological condition of the neighbouring teeth.

Microdontism.—Dental erosion, which has thus occupied our attention at length, is but one lesion among many. It is therefore very improper to make of it the exclusive characteristic of what is termed the syphilitic tooth. In reality, the influence of hereditary syphilis shows itself upon the dental system in multiple forms, of which erosion is but one, and of which many other kinds are no less curious or important from the stand-point of retrospective diagnosis.

Microdontism is among the dental malformations which have remained almost unrecognised, owing to the exclusive attention accorded to erosion. It is quite common, however. It is mentioned in a number of observations, and for my part I have frequently met with it in my patients, either as an isolated lesion, or, more commonly, associated with other dental malformations. So that, without attributing to it an accurate or special signification, I have been led to consider it as an important and valuable diagnostic element. Its name defines it. Derived from two well-known Greek words (*mikros*, small, and *odous*, a tooth), it describes the condition of a tooth abnormal through slenderness of proportions—a dental malformation consisting of an unusual smallness of the tooth. The tooth thus affected is lessened in all its dimensions, height, breadth and thickness. It is at the same time short, narrow, and thin—a small tooth, almost rudimentary in certain cases.

Microdontism is never a general condition of the entire denture ; at least, I have never met with it under this form. On the contrary, I have always seen it affecting but a few teeth in the midst of an otherwise normally developed denture. Sometimes it is even confined to a single tooth. The teeth affected by it in order of frequency are, the superior central incisors, the superior lateral incisors, and the inferior central incisors. In a case of Lannelongue's it affected the four superior incisors. It is found in all degrees, and is often so slight as to be passed unperceived in a superficial examination. Such is the case of a patient we are now treating in our wards for symptoms of hereditary syphilis, and who presents three teeth notably less than normal—two inferior central incisors and one superior lateral incisor, not however, so reduced, that the anomaly would strike an observer at first sight. At other times, on the contrary, microdontism is more marked. It then constitutes a real deformity, which could not be passed unnoticed. Two examples may be given :—A young man of eighteen, affected with different manifestations of hereditary syphilis, presents the following curious aspect : Alongside of three superior incisors, normal in form and development, the left lateral incisor was absolutely reduced as regards volume in all proportions ; it was ridiculously small, especially as regards length, and presented at the most two-fifths of the physiological size it should have had. In the case of a child, ten years old, the son of syphilitic parents and syphilitic himself, we observed the other more complex anomaly : First, the superior central incisors were strongly notched in cresentic form on their free edge (type of the Hutchinson tooth) ; rounded off on their angles, and singularly small, short, narrow, and thin, and measuring but half the length of the lateral incisors. Second, the inferior left central incisor presented a very marked transvere furrow about half a millimeter below its free edge, but was normal as regards size. Third, the inferior right central incisor was reduced in all its proportions, and measured only half the height of the corresponding left tooth.

These examples give an idea of this variety of dental malformation, which constitutes a precise clinical sign, easily verified, and equivalent in diagnostic value to that of erosive malformations. But this malformation may be still more marked—there may be such a failure of development that there is no exaggeration in designating it as dental dwarfing. I have before me a specimen of the kind drawn by Hutchinson.*

The two superior incisors do not protrude from the gums further than one or two lines. I have observed several analogous cases. In one of them the incisor was so small that it had the appearance not of a tooth, but rather of a small lump of enamel appearing through the gum.

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*A Clinical Memoir on certain Diseases of the Eye and Ear consequent on Inherited Syphilis. London, 1863. Fig. 7, plate I.

Singular as this mode of action of syphilis on the dental system may appear at first sight, it is nevertheless authentic and duly demonstrated. It has been observed a number of times, and under circumstances which leave no doubt of its pathogenic connection with hereditary syphilis. This is, however, not an isolated fact. Other curious arrests of development take place in hereditary syphilis and terminate now in atrophy of an organ, such as the uterus or the ovary, now in a kind of general atrophy which we have qualified by the name of infantinism. It is a defective nutrition of the same nature which causes this dwarf tooth. Microdontism is the infantinism of the tooth, and it is derived from a defect of nutrition which clogs the evolution of the dental organ in the same manner as a defect of nutrition of the same origin interferes sometimes with the development of other organs, or even with the development of the entire individual.

(To be continued.)

Dental News.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Ordinary Monthly Meeting, May 5th, 1884,

J. Smith Turner, M.R.C.S., and L.D.S., Eng., President in the Chair.

The Minutes of the last meeting having been read and confirmed,

The president announced that the following gentlemen had been duly nominated as candidates for election, and would be ballotted for at a subsequent meeting, viz :—Messrs. Stephen Mundell, L.D.S., Eng., Castly, near Harewood, Leeds ; and Arthur Pallant, L.D.S.I., Maidenhead.

The following candidates were then ballotted for and elected members of the Society, viz :—Messrs. Edward Bartlett, M.R.C.S., L.D.S., Eng., 38, Connaught Square, Hyde Park, as a resident Member, and William Forester, L.D.S., Glas., Clyde Villa, Temple Street, Barford, Stoke-on-Trent, and John H. McCall, L.D.S., Eng., the Spa, Leicester, as Non-resident Members.

Mr. S. J. Hutchenson showed a model of an upper jaw sent as a contribution to the Museum by Mr. George Wilson, of Hull. It showed that the patient was possessed of two supernumerary teeth, one occupying the place of the right upper central incisor and the other behind it.

Mr. Arthur Underwood handed round a tooth which had belonged to Ba Anta, a daughter of Rameses II., or the Great, who reigned about 1550 B.C. Ba Anta is supposed by Egyptain scholars to have been the daughter of Pharaoh who found and adopted Moses. The tomb in which she was buried was broken open and plundered by the Arabs some years ago; they even unrolled and then burnt the mummy, but the lower jaw escaped destruction and was found in the tomb, which was near Thebes. The jaw came into the possession of Mr. H. R. Graham, who presented this tooth to the Society.

Mr. Storer Bennett showed a specimen which had been lent for the purpose by Mr. Balkwill, of Plymouth, illustrating in a very remarkable manner the serious results which might happen to rodents from the continuous growth of their characteristic teeth when from any course their normal antagonism was lost. It was the skull of an old English black rat, now nearly extinct. Its two lower incisors had been deflected to the left, the two upper to the right, so that they did not meet in the usual way. The right upper tooth had described one complete circle and three-fourths of another, and being well inclined outwards, it had not encountered any obstacle. The left upper tooth, after describing a circle, had encountered the right upper jaw, which it had penetrated to the depth of one-third of an inch. The left lower tooth had been broken off, whilst the right lower tooth had penetrated the left upper jaw and the parts above, and its point projected a quarter of an inch above the highest point of the skull. It had also ulcerated through the lip in two places, a bridge of the upper lip covering a portion of the tooth. The animal was caught in a flour mill, and as the lower jaw was quite fixed, it could only be supposed that it had sustained life by sucking the flour. The well known law that parts which were not used became wasted was also illustrated by this specimen; for whilst the left side of the lower jaw, on which some movement was possible, was fairly strong, the right side, which was fixed, was much less developed.

Mr. Bennett added that although several specimens illustrating the results of this accident were to be found in the Society's Museum, and in that of the Royal College of Surgeons, he had not been able to find in either of these collections so remarkable an instance as that which he then showed. He exhibited also the skull of a rabbit, lent by Mr. Boyd Wallis, in which the left lower incisor had grown to a great length, owing to the same cause.

The President remarked that he believed such accidents were more common amongst rodents than would appear from the number of specimens to be met with in museums and elsewhere. Most gamekeepers, when questioned on this subject, could relate stories of the odd things they had seen, but as the animals were of course always in poor condition, and therefore worthless in the gamekeeper's eyes, they were not preserved.

Mr. Betts exhibited models of the mouth of a boy, sixteen years of age, showing a curious mixture of retained temporary teeth and suppression of the permanent. In the upper jaw a bicuspid on either side were absent, also the left lateral incisor, whilst the left permanent canine came down between the temporary canine and the left central. In the lower jaw two bicuspids were absent, and also the central incisors; whilst of the temporary set there remained a central incisor, with which the patient was born, and the roots of a temporary molar.

He also showed a model of the mouth of a boy, twelve years of age, whose canines indicated very plainly the transition between the ordinary canine and the bicuspid. They showed distinctly a rudimentary cusp on the lingual aspect, which was in fact almost as well marked as was the case in most lower bicuspids

He took the opportunity of bringing before the notice of the Society a drug known as Ethylate of Sodium, which had been used for some time by the medical profession for the purpose of destroying cutaneous nævi, and which had lately been suggested to him as a new remedy for destroying the nerve. He had found it useless for this purpose, but very useful for obtunding the pain of sensitive dentine, more especially round the necks of teeth where the gum had receded, and where nitrate of silver would be objectionable from its unsightly stain. The dentine should be carefully dried before the ethylate was applied, and the application should be repealed at intervals as the sensibility returned.

A member remarked that anhydrous oxide of calcium, used quite dry, had lately been recommended in the "Cosmos" for obtunding sensitive dentine. As this was inexpensive and easily procured, it was at least worth a trial.

Mr. W. A. Hunt (Yeovil) said that no doubt others besides himself had found an elevator with the blade set at right angles to the handle, very useful for the removal of lower stumps; he had been in the habit of using two of these, made respectively for the right and left handed cases. To save the time lost in changing instruments whilst the patient was under the influence of nitrous oxide, he had had an instrument made, which he now exhibited, in which the two elevator blades were attached to the same shaft, so that it could be used for either side, and had found that this conduced very much to rapidity of action.

Mr. J. H. Mummery then read notes of a case of extensive alveolar abscess, interesting on account of its somewhat obscure origin.

The patient was a powerfully built healthy-looking young man, thirty years of age, resident in Natal. Before he came to Mr. Mummery he had been suffering for more than a year from abscess pointing beneath the angle of the jaw, there being another opening about an inch and a half below, connected with the first by a tortuous sinues. These openings were continually discharging and were a source of great annoyance to the patient, and he had consulted several surgeons, one of whom sent him to Mr. Mummery with a request that he would remove two molar stumps from the lower jaw on the right side.

He found two necrosed lower roots, which were easily removed, but could find no sinus leading from the sockets towards the outer openings. The second molar had a small crown filling of white cement, but was otherwise to all appearance healthy—not loose or tender on tapping. The third molar was in place and healthy. Mr. Mummery requested the patient to give him another opportunity of examining the mouth in a short time, but six months elapsed before he came again to have a filling inserted. In the interval he had, under medical advice, taken a voyage to America for the benefit of his health, having been told that the abscess was due to constitutional conditions. No improvement had taken place in the condition of the abscess, except that by compression the patient had succeeded in closing the lower opening, and the sinus between the two had healed ; there was still much discharge from the remaining orifice. Mr. Mummery persuaded the patient to submit to another careful examination of the mouth, and found again that tapping the second molar, which had the small cement filling in it, gave no pain ; but he now noticed that a slight sensation of pulsation could be felt under the jaw at each tap. The patient said the tooth had been filled a year before he came to England, and he now remembered he had some pain in it a day or two after it was filled, which, however, soon passed off. Mr. Mummery drilled out the filling, which, though apparently small, he found extended to the pulp chamber, on opening which there was an escape of pus. He then urged the immediate extraction of the tooth, which was done under nitrous oxide, and it was then found that a probe could be passed some distance in the direction of the outer opening. In two days' time the abscess had ceased to discharge, and the patient returned to the Colony the same week. He afterwards wrote to Mr. Mummery stating that the discharge had entirely ceased, and that he suffered no further discomfort.

The interest of the case seemed to be chiefly in the fact that the diseased stumps first removed had nothing to do with the abscess, and that a tooth which appeared healthy had caused all the trouble. It might be added as a point of minor interest that the patient calculated that the tooth had cost him, in surgeon's fees, passage money, &c., between £400 and £500.

Mr. John Fothergill (Darlington), who was present as a visitor, showed some interesting models.

(1) One of these showed three well-developed bicuspids present on one side of the lower jaw.

(2) Models of the mouth of a young lady, showing the upper central incisors worn away to the extend of about a fifth of their length. The bite appeared to be natural, but on protruding the lower jaw the lower centrals were seen to fit the inequality exactly. Mr. Fothergill could only suppose that she had a habit of grinding her teeth badly during her sleep.

(3) A model of the upper jaw of a young lady, sixteen years of age, showing the ill effects of the too early removal of temporary teeth. On one side neither of the bicuspids were erupted, being impacted between the canine and first molar. On the other side the second bicuspid was kept back by being impacted between the first bicuspid and first molar.

The President then called upon Mr. Betts to read his paper. (*See page 691*).

MR. VERRIER'S CONTINUOUS GUM FACINGS.

On June 30th and July 1st., Mr. Verrier gave two most interesting demonstrations of his process for facing vulcanite or metal plates, at the Dental Manufacturing Company's Depot. The Company had gone to very considerable pains to arrange so that all who came might have a good opportunity of seeing the delicate process in all its details, and had succeeded as thoroughly as could be expected for many to see what really requires to be shown, to about half-a-dozen gentlemen at one time, instead of as at each of these demonstrations some forty gentlemen being present. Mr. Verrier has evidently been steadily persevering to improve his already simplified process since his demonstrations of last year, and showed many results. Amongst others he has discarded the platina gauze stage, the fire-clay platform, the investing of cases in his fire-clay and plaster mixture and merely partly fills the muffle with silex (a substance like sand) and rests the case to be fired upon it. In fitting his teeth to a model he takes care that the roots shall roughly approximate to its contour. The teeth are held in their positions by a platina wire soldered with fine gold to their pins. Mr. Verrier takes the piece thus prepared and placing a piece of blotting paper on the ball of his thumb, holds it behind the roots of the teeth and forthwith packs the gum body upon it, taking care to use plenty of distilled water to condense, building the surface of the gum facing to the thickness and shape desired ; he then removes the blotting paper and the case is ready for its first firing, supported as described on the loose silex. He has adopted a a modification in the working of his furnace (suggested by Mr. Gilbert Walker who is earnestly working with him to acheive perfection) by which the muffles being fixed in the furnace, are prevented from cracking and the cases fired from "gassing" *i.e.* being discoloured, hitherto one of the most disheartening vexations and irratating difficulties to be overcome. That at each demonstration Mr. Verrier kept some forty gentlemen eagerly attentive for something over two hours (many on the second day having also been present on the first) speaks more of the growing interest the Profession is gradually taking in his beautiful work than anything we can write in praise of it. Indeed its beauty and real ease of manipulation only requires to be known for the work to be thoroughly appreciated and introduced into daily practice.

At the Dental Examination of the faculty of Physicians and Surgeons of Glasgow, held July 21st to 23rd, Mr. H. J. Kluht of Norfork Terrace, Bayswater, obtained the Diploma of the College.

VACANCY.

Dental Surgeon to the West London Hospital, Hammersmith.—Applications by August 21st, addressed to Secretary.

APPOINTMENT.

Mr. J. Gray, L.D.S.E., has been appointed Honorary Dental Surgeon to St. Bartholomew's Hospital, Chatham.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From June 3rd to June 30th.

Extractions	Children under 14	443
	Adult	860
	Under Nitrous Oxide	431
Gold Stoppings		881
White foil ditto		10
Plastic ditto		686
Irregularities of the Teeth treated mechanically		145
Miscellaneous Cases		307
Advice Cases		90
Total		3143

S. C. Buckland, House Surgeon.

DENTAL HOSPITAL REPORTS. NATIONAL DENTAL HOSPITAL.

Monthly Statement of operations from June 1st to June 30th, 1884.

Number of patients attended		1370
Extractions	Children under 15	455
,,	Adults	1034
,,	Under Nitrous Oxide	464
Gold Stoppings		80
Other Stoppings		494
Advice and Scaling		256
Irregularities of the Teeth		165
Miscellaneous		190
Total		3028

Wm. Todd Paterson, House Surgeon.

[These reports were unavoidably omitted in our last issue from want of space.]

COMMUNICATIONS RECEIVED.

Mr. C. E. White; Dr. Langmore; Mr. J. E. Hubbert; Mr. J. S. Amoore; Mr. E. W. Keatinge; Mr. H. H. Mason; Mr. W. Foot; Mr. W. Taylor; Mr. R. M. Ross (Utica).

BOOKS AND PAPERS RECEIVED.

Garretson's Oral Surgery; British Medical Journal; Dental Cosmos; Independent Practitioner; Deutsche Monattschrift für Zahnheilkunde; Monattschrift des Vereins; Deutscher Zahnkünsler L'Odontologie; Revue Odontologique; L'Art Dentaire; Revue Odontologue de Bruxelles; L'Odontologie; Dental Practitioner; Journal British Dental Association; Dental Record; Pharmaceutical Journal; Chemist & Druggist; Glasgow Medical Journal; Zahntechnische Reform.

British Journal of Dental Science.

No. 398. LONDON, AUG. 15, 1884. Vol. XXVII.

ARTIFICIAL TEETH.

By Dr. Price, Birmingham.

With all the improvements in the *materiel* of mechanical dentistry—vulcanite is so strong that the artificial plates may be made so light that even the most fastidious may wear them with comfort ; and teeth so extremely beautiful in color, form, translucency, and texture, as to leave nothing in the way of improvement to be desired—it might easily be supposed that the artistic construction of an artificial set of teeth would be at once a desideratum with every dental mechanician, and not difficult of accomplishment. But the hideous attempts to restore lost teeth witnessed every day must convince the refined operator that there are dentists whose aim is not that "art should conceal art," but that its artificiality should be patent to every observer. "Grave stones," "the bent handle of a tooth-brush," are the expressions frequently employed to express the patient's admiration of dental art, and a disgust both of the dentist and such artificial teeth.

Art culture is necessary, "the human form divine" must be studied, every tooth, every mouth in connection with general appearance, facial structure, temperament, age, and sex should be carefully examined if perfection is desired. The dentist, unlike every other artist, has his masterpieces under his eye daily ; and while the musician, architect, or painter must travel to perfect their education, his patients bring to him, for examination and operation "perfection in his speciality" to be his guides, and for his imitation.

The term "Prosthetic Dentistry," used in America, seems scarcely to express what is needed in the education of the practitioners of our speciality. Whether the teeth be mounted on a "plate," or the piece be made in the form of a "bridge," or "fixture," limits to a large extent their discussions, and to some extent influences opinion in this country ; but cleanliness, the health of the mouth, and the inconvenience attending accidents to the artificial piece will limit the use of these contrivances. The common sense of the patient and the reputation of the dentist are against them. No matter how perfect the adaption of the "bridge," or how small the portion of the membrane of the mouth covered the fluids of the mouth, particles of food, &c., will find lodgment under; and, in spite of every effort to clean them away, will remain to vitiate the breath. But the breath will not only be poisoned, the mouth itself will become diseased; for it must be remembered that the gums are covered with epithelium which must be removed as fast as it is formed, or the portion of the gum which has been covered will become "red and vascular," will bleed on the slightest touch, and the mouth will be painful, offensive, and incapable of bearing the pressure of any artificial contrivance at all.

Foul breath and sore mouth, abscesses, and accidents to the piece, one would think insuperable objections to permanent structures for the mouth. Even with an ordinary plate, which may be taken from the mouth in an instant, the fracture of a tooth, the breaking of the plate or bands, especially at table and when from home, are accidents that, even to persons of strong nerves, are exceedingly awkward and embarrassing; but in the case of a "fixture denture," no matter what the accident—a tooth may break, the piece may give way on one side, or the "bridge" itself snap through, and nothing can be done till professional aid is secured. The shame and confusion experieneed on such an occasion was vividly sketched to the writer by a lady who had witnessed such a scene at a wedding-breakfast in the States, where she affirmed, there is not a tithe of the delicacy respecting artificial teeth there is here. In this case, two good teeth had been sacrificed for "points of attachment," a considerable amount of time taken to bring another root into something like a healthy condition, and then, almost as soon as the piece was secured, a tooth came off, and finally a pin gave way, which, besides the confusion and annoyance to the lady, hurt the mouth, and was the cause of the "bridge" being sent back to the dentist to be converted into a plate.

"Æsthetic dental prosthesis" should aim at perfection in the substitution of the artificial for the natural. The uniform lifeless appearance constantly met with in artificial work should be avoided, and *expression* and *naturalness* should be studied in every case. I have in my surgery a set of continuous gum teeth that I have shown probably to hundreds of persons and always with the same results—admiration of the work, and a wish that they had a set like them. It is astonishing what may be done by shading, grinding, and artistically mounting. The cutting edges of the teeth may be ground to accurately represent age, &c., and a life-like appearance is secured by slightly separating the upper centrals, "bending in" the canines, and modifying by trifling irregularity the lower centrals and canines; and in cases where much seen, the bicuspids may be of a darker shade, ground to show wear, and to a small extent separated or misplaced. The temperament, age, physique, and any remembered natural peculiarity or irregularity should all be taken into account if a set of teeth so life-like as to defy detection is to be constructed.

In the selection of the teeth it should be remembered that both shape, size, and color, are modified by sex and temperament. The teeth of females are smaller and thinner as a rule than those of males, in other respects, temperament and habit are our only guides. Three temperaments—the mental, vital, and motive, may be enumerated. The teeth of the mental type are those beautiful chisel-shaped pearls whose period of endurance is so brief, and which bring frequently so much suffering to their possessors. The vital are a broader, thicker, whiter, and comparatively speaking shorter tooth, with more endurance than the mental, but less beautiful in shape, color, or regularity. The most enduring kind of teeth are the motive—long, strong, bone-like structures that will wear down to the gum and be of service even then. Of course, these three types are not always met with "pure and simple." They are modified as the temperaments "run in" to each other, as the mental-vital, mental-motive, &c., but to the dentist accustomed to observe, there will be little difficulty in deciding, both as respects the temperament, and the shading, grinding, and arrangement in mounting which will best restore the loss of the natural organs.

To construct a perfect set of teeth, two things are required. In the first place, the fit and articulation must be accurate, or they cannot be worn with comfort, and their utility as masticators would be wanting. These two pre-requisites, although so self-evident, are not in a large number of cases secured; and the consequences are the mouth is bruised and cut, and the highest aim of dental skill—the preservation of health by the thorough mastication of the food—is frustrated. But the fit and articulation, with ordinary care and ability may be always obtained. No so, however, with the second requirement. Only patient and laborious observation, natural taste cultivated by continuous artistic work, and a desire to reach perfection in his professional work will ever enable the dentist to construct his artificial substitutes in that inimitable order that shall make them to the sight like life.

In the construction of artificial work, some will prefer, and use almost exclusively some one material ; and, I think it may be safely affirmed that, whenever possible, vulcanite should be esteemed the best. Some like teeth with gums ; but with good strong, red or black vulcanite, and a gum coloured facing, the appearance is so natural when the gum is properly modelled and finished, that nothing else, all things considered, is so durable and so economical. When vulcanite is inadmissible, I always advise platinum. And I do so for several reasons : I esteem it quite as good in the mouth as gold ; it never gives to the lower part of the mouth that straw-coloured tinge which gold in certain lights does, and from some cause or other, it never affects the sound of the voice. For these reasons, and because a strong and durable plate, which is a matter of great consequence to most patients, can be bought for less than a thin and consequently much weaker one in gold, I recommend it, but even then only when it would be unwise to use vulcanite.

In England, dental art and dental skill are not appreciated or utilised to the same extent they are in America. The public are ignorant of our ability both to save and to restore the teeth—to give back to the features their lost expression, and to the face its beauty, to mitigate pain, and to cure the acutest suffering when all other skill would be unavailing ; to supply those lost structures by which the food is prepared for the nourishment and support of the body, and without which the most nutritious and delicate foods bring but pain, disease, and death, and to give back to the human voice, when its indistinct utterances " embitter the cup of life," "its eloquence waiteth," its wisdom is widowed of utterance," and the " fair privilege of speech rejoiceth not the soul," to restore to it its wonted sweetness and its natural tones. It is the dentist's high privilege by his skill to save, when gone to, to provide substitutes for a set of organs which for health and appearance are of vital importance. If the public is ignorant of our resources it is our duty to bring a knowledge of them within its reach. The importance of the teeth, how to preserve them, and the value, both for appearance and health, of artificial to replace lost natural teeth, should be made known in every home and taught in every school.

THE DISTRIBUTION OF PRIZES AT THE DENTAL HOSPITAL.—We publish in another column an account of the distribution of prizes. It was matter of regret alike to students and visitors that Mr. Coleman was unable to attend. Sir Edwin Saunders, with his wonted good nature and tact well filled the vacancy.

THE ADMINISTRATION OF ÆTHER AS AN ANÆSTHETIC PER RECTUM.

By Dudley W. Buxton, M.D., B.S., M.R.C.P., Administrator of Anæsthetics at the Hospital for Women, Soho Square, &c.

Although in the common course of dental practice the administration of nitrous oxide is deemed both more safe and more agreeable, yet it has not infrequently fallen to my lot to be called in by dental surgeons to administer æther for their patients. In such cases, when as it usually happens, several teeth or stumps require removal, it has been my usual practice to employ nitrous oxide as a narcotising agent, because it is less unpleasant and less liable to provoke cough or laryngeal spasm. When by the usual signs I am convinced of my patient's almost complete unconsciousness I turn off the gas and supply æther by opening the stop-cock connecting the mouth-piece with an æther inhaler. The apparatus in fact which Mr. Clover himself used, merely modified in detail. These proceedings can be carried through without fuss or fright to the patient and are applicable to most if not to all individuals, save, perhaps, very young children. They may further be conducted at all times, and I do not find the almost upright posture of the dental chair to be in any way detrimental. In England, it is true, dental operations are in general less heroic than abroad, where the line is sometimes difficult to draw between a surgeon who devotes his skill to operations about the jaws, and the surgeon dentist who extends his domain to removal of jaws as well as extracting teeth.

And so while one regards with suspicion such a new departure in anæsthetics as at the first blush rectal anæsthetisation must appear, it yet is incumbent upon us to ascertain how far our suspicion is well founded, or whether it may not have been wholly engendered by prejudice.

The first surgeon who recently suggested the administration of æther by the rectum was Dr. Axel Yversen, of Copenhagen. According to M. Mollière, surgeon to to the Hôtel Dieu de Lyon.* Dr. Yversen speaks of the method as, at all events in his clinic, interchangable with the method of mouth inhalation. M. Mollière confesses that he was alike astonished and impressed by what he heard from his visitor, accordingly he proceeded to put to the test of experience the narrative Dr. Yversen had given him.

In the paper already quoted, M. Mollière proceeds to recount the results of his trials.

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* Lyons Médicale, Mars 30, 1884, p. 419.

His first patient was a girl of 20; æther was administered through a double rectal tube being pumped in by a common hand spray. The operation to be performed was the removal of a tumor from the parotid region.

No sign of narcosis was present at the end of twelve minutes, but the breath smelt strongly of æther, and the girl said, she tasted æther. Then the speech became affected. To effect a more rapid result, some drops of æther were evaporated beneath her nose and she became at once unconscious.

A small quantity [?] of æther only was absorbed. This patient vomited some soup which she had taken shortly before she was ætherised, but complained of no nausea or languor. She came to her senses very rapidly as soon as the tube was removed from the rectum.

In the next case a woman of 40 was the subject. It was desired to remove a mucous polyp from the antrum of Highmore. A caoutchouc tube of the size of a finger was connected with a flask which contained æther. The flask was immersed in water at 120° F. The æther in boiling ascended the tube and entered the rectum. In five minutes this patient became incoherent, but anæsthesia was procured by holding an æther saturated sponge to the nostrils. Upon recovery there was no nausea or vomiting, but slight excitement, similar to what occurs when æther is administered by the air passages. Four other cases were cited, and M. Mollière believes all were highly satisfactory. He claims that the rectal method is better than the common one in the following ways; Less æther is required, the after effects are less lasting and less objectionable. The time taken in recovery is less. In operations about the face and mouth the convenience of this method is obvious. There is a complete suppression of the stage of excitement. This last fact was strikingly shown in the case of a man who was an habitual inebriate to the extent of a quart of pale brandy per diem; he was completely ætherised and without any excitement or struggling.

The accuracy of M. Mollière's results can hardly be at present estimated, so few are the cases and so conflicting the opinions of those who have had resort to rectal ætherisation. Dr. Bull* tabulates seventeen cases varying as to the gravity of the surgical procedure undertaken in each case.

In the 1st a girl aged 18, there was no stage of excitement; no suffocation; no vomiting or nausia: ℥ii were used.

In the 2nd a sailor aged 18, there was vomiting half-an-hour after: ℥ii were used.

In the 3rd a labourer aged 42, there was slight excitement, but mouth inhalation was also used; ℥iii were used.

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*New York Medical Record, May 3.

In the 4th a man, same effects as 1st: ℥ii were used.

In the 5th a powerful man, inhaler used: ℥iii were consumed.

In the 6th the patient vomited, he had had food 2 hours before. There was much collapse, delayed recovery: ℥iii ʒii were used.

In the 7th a woman 48, some struggling, inhaler used: ℥iii.

In seven of the remaining cases more or less disturbance of the bowels occurred while in two there was tenesmus and blood passed with the motion.

In six there was slight vomiting. In most of the cases there is mentioned some distension of the bowels but in Dr. Bull's cases this symptom was never severe enough to give rise to more than discomfort. Dr. Weir of New York however reports a case of a child æt, 8 months upon whom he operated for hare lip. The child was ætherised with ℥ii of æther subsequently died presumably from intestinal hæmorrhage. It seems from Dr. Weir's account that the infant had its intestines rather vigorously distended through the refilling of the hot water vessel employed to heat the æther. As a result of this the æther became volatilised with very great rapidity, and it seems not improbable that the intestine suffered in consequence.

It must be accepted that at present we can only form a provisional judgement on the method under discussion.

To begin with, we find that in several, in a large proportion in fact of the cases in which rectal anæsthetisation was practiced resort was also had to inhalation through the lungs, so that the symptoms cannot be wholly credited to the new method of procedure. And further the cases are too few for us to accept any generalisations founded upon them.

It may be submitted that Dr. Yversen's method is one which while it appeals strongly to our favourable reception on account of those advantages which certainly have accrued in some cases, yet could only be employed with the full consciousness that there rests a heavy indictment against it, none less in short than that of manslaughter, while ugly and undesirable effects have occurred even in those few cases in which it has been called into requisition.

It would appear that rectal anæsthetisation shows itself to be more supplemental to other methods than one which is likely to replace those in vogue. In operations about the face and head, it would seem advisable to commence by lung inhalation and to maintain narcosis by rectal anæsthesia. At present we possess no statistics of the employment of Yversen's method in the surgery of the intestines, and it may be worthy of note that it seems to afford a ready means of distending the intestines while it anæsthetises, and so may prove highly useful, in colotomies and enterotomies, if the intestinal walls should show themselves not permanently injured by the distension. But however tempting may appear the vista opened by the innovation in question, we are bound to remind ourselves that already a death has occurred and cases also are on record in which alarming symptoms made their appearance. In the face of these facts the utmost caution must prevail in repeating Mollière's and Bull's experiences, and even with all precaution, it is advisable that the method should so far be modified as to ensure the equable warming of the æther.

To sum up:—With the use of less æther, we obtain in most cases rapid anæsthesia which is effected with little or no excitement ; the unpleasant after effects of the narcotic are minimised; the face, neck et cœt are left free for surgical procedure:—when Yversen's method is employed. And secondly the evil effects are summarised thus : Bloodly stools with diarrhœa may result : Collapse and even death (one case) have resulted.

These sides of the scale must be duly balanced and we must wait upon the course of events and the experience of more cases before we venture to express downright reprobation of the new method or commit ourselves to an unqualified expression of approbation.

CLOSURE OF THE JAWS.

Dr. John J. R. Patrick, Belleville, Ill.*

I desire to read before this Society the sum and substance of an essay on ankylosis, or immobility of the jaws, but more especially that immobility produced by lesions of the soft parts. I have found it necessary in order to contrast the different modes of operation for the relief of this malady, to extract from essays written by the most prominent surgeons in Europe and America all that appears pertinent to the subject.

In commencing, it would be well to consider the relations of the oral cavity, and in doing so I cannot do better than adopt the description given by Dr. Frederic Esmarch, Professor of Surgery in the University of Keil, which occurs in an essay written by him on the closure of the jaws by cicatrization, in which he investigates the pathology of the affection and describes an operation for its relief by the formation of an artificial joint. Professor Esmarch says :—" The cavity of the mouth is divided by the alveoli and teeth into an inner and outer space ; the latter is closed in front by the cheeks and lips, which form an elastic dilatable sac ; within this the rows of teeth can be separated from each other, even when the lips are closed, and much further when the mouth is opened. The inner surface of this sac is covered by a mucous membrane, which is also very dilatable and elastic, and which forms a duplicature at the upper and lower boundaries of the outer cavity of the mouth, where it is reflected on the outer surface of the bone and ends on the edges of the alveoli as gum. This membrane is so elastic that when the mouth is open to its widest extent, it is still by no means put on the stretch, whilst when the mouth is closed it presents no folds. It is clear that as soon as this dilatable sac shrinks together, by the formation of a rigid substance it loses its elasticity, and the mobility of the jaw must either be impaired or entirely cease. This happens most frequently through the formation of cicatrices which follow ulceration or sloughing of the mucous membrane of the mouth, as from mercurial stomatitis or noma.

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* A paper read before the Illinois State Dental Society.

" When cicatrization is complete, the elastic ductile mucous sac of the cheek is found to have disappeared, and instead of it the cicatrical tissues contract so tightly from one alveolar edge to the other that it is scarcely possible to put the finger between it and the rows of teeth ; and the teeth themselves can be separated only a little, if at all, or only shifted from side to side very slightly. As far as is known, there are few or no means available to check the shrinking of cicatrices. It was one of Dieffenbach's great services to surgery that he gave this theory its full value ; it was he who first taught us to place a proper value upon this action of nature, and showed how to make it available for operative procedures under certain circumstances. Thus he first taught how to cure the closure of the mouth by covering the margin with mucous membrane ; to form eyelids which do not adhere to the globe or roll inwards after cicatrization, and many other methods which we now consider self-evident in plastic surgery.

Unfortunately in most cases of closure of the jaws from cicatrices, it is impossible to find enough membrane in the immediate vicinity to use as a flap for a lining, and totally impossible where the whole lining membrane of the cheek is involved. It is only in cases of closure of the lips, enlarging the commissures of mouth and eyelids, that a small flap of healthy mucous membrane is feasible ; for if the mucous membrane is removed from the neighbourhood of the excized cicatrix, and the flap successfully applied, contraction will take place on the surface where the healthy membrane was removed, and cicatrization will follow. So that the only advantage to be gained in such an operation is to give the inodular tissue and contraction the least undesirable direction. Professor Esmarch, in concluding his essay on this subject, says: "All the hitherto-received methods, such as the freeing or cutting through the cicatrix from the mouth—the separation of the whole cheek, in order to accomplish this perfectly—the extirpation of the mass of cicatrix, the application of mechanical means in order to drag the jaws asunder, can only be of avail in those cases, where, in some corner or other there is found a remnant of healthy mucous membrane. Putting aside the more favourable cases, there still remains a number of patients of this kind, in whom the usual methods produce no lasting cure; and for those cases I recommend the formation of an artificial joint in front of the contraction, in order to give at least the other half of the jaw some, although a limited, motion."

The formation of an artificial joint in the ramus of the jaw had already been recommended and tried by Dieffenbach in his operative surgery, but *behind* the contraction, and, naturally, without any good result, since the impediment to motion lies more forward, and in consequence is not remedied by such an operation. Van Bruns has also operated in this manner without success.

This proposal of Professor Esmarch's to form a false joint in front of the cicatrix was suggested to him by a case which came under his care in 1854, in which considerable destruction of the cheek and contraction of the cicatrix had occurred, together with immobility of the jaw and necrosis of a portion of it. The necrosed portion was fortunately in front of the cicatrix; the bone having been removed, it was found that mobility was restored, and a useful amount of movement obtained. Professor Esmarch therefore suggested at the Congress at Gottingen, in 1855, the removal of a piece of bone in the case of contracted cicatrix, but did not happen to meet with a case suitable for the operation until after it had been successfully performed by Dr. Wilms, of Berlin, in 1858. The same operation was performed by Dittl of Vienna, in 1859, and by Wagner of Konigsberg in the same year. It also appears that shortly after this proposal of Esmarch's, Professor Rizzoli of Bologna, independently conceived a similar idea by merely cutting through the bone with a powerful pair of forceps without removing any portion of it; he made no external incisions, but operated through the mouth. This was in 1857. Professor Esmarch's mode of operating was put in practice in England at St. George's and St. James' Dispensaries by Christopher Heath, F.R.C.S. (*.) In describing the operation, Christopher Heath says: "I divided the cicatrices freely, screwed the mouth open, made the section, but without permanent benefit." The subject of contraction of cicatrices within the mouth has attracted much attention in Paris, and has furnished the topic of frequent discussions at the Society of Surgeons. Many operations have been performed, both by Esmarch's and Rizzoli's method, but with poor success, since reunion of the jaws has taken place.

(To be continued.)

CLINICAL STUDIES ON THE COMPLICATIONS OF DENTITION.

By Dr. Magitot.

Continued from page 692.

These observations are substantiated by experiments which we, together with Charles Legros, have made upon young animals. Thus, in pricking the follicles, in wounding in various ways the gingival edge at the moment of eruption. we have only succeeded in producing certain local traumatisms and ulterior inter follicular ailments of nutrition issuing in the artificial production of monstrosities (odontomes) but without provoking the general phenomena.

The following is a resumé of the experiments undertaken in 1872, in the laboratory of histology of the Faculty of Medicine.

Experiment 1st.—On a dog of two months, suckled by its mother, we experimented on the left inferior alveolar process, making several punctures with the needle under a microscope. These punctures penetrated several molar follicles, but without causing more than a few drops of blood to flow. The animal was set apart and made the object of constant observation. No apparent disturbance manifested itself in its general condition. During the following days a certain injection of a corresponding portion of mucous membrane was observed. Later on, at the moment of the eruption of teeth on the opposite side, those that had been wounded did not appear.

Experiment 2nd.—On another dog of the same age as the preceding we operated with bent scissors for the extraction of a fragment of mucous membrane on the level with the molar region on the prominent part of the gingival swelling. This excision penetrated to the level of the follicles when the instrument encountered the sharp crown of dentine already enveloped in mucous membrane. The animal, under the closest attention, evinced at the termination of this mutilation no disturbance of health.

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* To whose exhaustive work on "Injuries and Diseases of the Jaws" I am indebted, and which I have freely used in selecting from chapter xxvii. the history of operations performed for the relief of closure of the jaws.

Experiment 3rd.—On a third dog, under exactly the same conditions, we operated by means of the galvanic cautery, a cauterization penetrating the thickness of the mucous membrane in the molar region. The same surveillance exercised with similar attention did not bring to light any disturbance whatever. It is from the preceding considerations that we have arrived at incredulity, and the following conclusions respecting the question of the complications of first dentition, which we borrow from the thesis of M. Lévêque, in which we altogether concur.

1. It has never been incontestably established that there is any relation of cause and effect between dentition and the disturbances usually attributed to it.

2. We meet in science a great number of pathological facts during infancy which formerly were attributed to dentition, but which have since been recognised as perfectly foreign to it.

3. Direct experiments, having for their object wounds on the follicles or gingival borders of newly born dogs have produced, we may say, no complications of dentition.

4. It is acknowledged that the morbid phenomena which are observed in the early days of domestic animals, and are altogether similar to the ailments of infancy in man, are absolutely independent of dentition.

5. The theory of complications attributed to dentition does not appear to us at the present time based upon any absolute proof.

6. Complications considered in the new-born as being under the influence of dentition, ought, according to us, to be referred to a medley of phenomena as yet inadequately explained and which might be designated by a general term without prejudice. Complications or maladies of evolution or first age.

What shall we say now to all the therapeutic experiments prescribed or applied to such an ailment: the suppression of swellings, the corals incriminated by Hunter, Capuron and others, lancing of gums advised by Hoffman, shaving the head, prompt checking of cutaneous eruptions, vesications, setons, moxas, the actual cautery of old times, the application of intermittent or continuous currents; everything that the therapeutic arsenal can furnish to the imagination of doctors driven to extremity.

We are even surprised not to have met with trepanning for infants affected with convulsions, as was practised in prehistoric times and formerly prescribed by Jehan Taxil at the commencement of the 17th century. Let us pause, however, to consider a practice recommended by a great number of authors. We speak of the incision or the excision of the gums. It is known that Vesalius, Ambrose Paré, Hunter and B. Bell formerly prescribed it ; it is known also that it founded a school in England and that the works of Harris, of Cooper, of Brownfield, of Copeland have proclaimed its utility. It is well to add also that Van Swieten in his commentaries on the aphorisms of Boerhave has expressed doubts on the efficacy of these means, which have since been participated in by other authors—by Guèrsant, amongst others. Notwithstanding this practice continues up to the present time as the only and supreme resource. We cannot affirm that it is often applied, but it is everywhere recommended.

Without speaking of the observation, somewhat hypothetical in which Dr. Lemonnier asserts that he restored a child to life when on the point of death by incision of the gums, we will cite an instance of more recent date mentioned in an article upon the subject by M. Fonssagrives, in which he relates a case of convulsions which had lasted several days and which ceased almost immediately after a lancing of the gums which he had seen tumified.

Would the attacks have ceased of their own accord without such operation? We may assume so. The eclampsia of infants, the different spasmodic attacks are in their nature as prompt to disappear as to appear and any other treatment producing sufficient re-action would have doubtless led to a similar result. Have we not remarked excellent effects of simple succession of remedies—immersion in cold water—the bath or simple friction of the skin.

This observation of M. Fonssagrives is by no means isolated there being many others corresponding to it.

This operation appears in every case in our opinion to be based upon an assumed conjested state of the gingival mucous membrane which we have never succeeded in ascertaining, and against which we have already protested and which we have termed the physiological process of the eruption. But this is notall, and we must now say a word upon the operation itself. Is an incision or excision of the gums an insignificant operation?

Without speaking here of the lesion of the gum which is certainly of small importance, it would be well to examine what effect the contact of the bistoury or the scissors may have upon the crown in process of formation. This circumstance is not unimportant when we consider the extreme fragility of the enamel of so brittle and powdery a nature, which covers the crown as yet enclosed in its follicles ; the incision of this membrane may possibly occasion inflammation of the sac and the destruction of its contents. It has been suggested, it is true, to substitute for the lancet the laceration with the nail ; this practice, which is so familiar to nurses, relatively less grave, although it may lead to serious complications within the follicles. But in view of the possible inconveniences of such a practice, we shall wait until a more precise indication of its efficacy be established ere we counsel it.

From the 5th to the 6th year, we observe in the child as well as the series of temporary teeth which have not yet fallen, four molars of considerable size, and which, in reality initiate a succession of eruptions of the permanent teeth. These four teeth occupy, as we know in their total evolution, a considerable time since the first trace of their follicle corresponds with the third month of uterine life, while their eruption does not take place before the 5th year. It is then a period of evolution, the total duration of which is close upon six years. This evolution presents great physiological importance, for these teeth are very large, larger indeed than all the other permanent teeth. They appear, as is known, at the back of the series of temporary teeth, and on a part of the jaws absolutely without obstruction. Their eruption is similar in all points to the milk teeth, and as they often penetrate unperceived, it happens that parents and even unobservant doctors mistake them for temporary teeth. This is an error, which at first sight is very prejudicial ; these teeth in reality, on account of the slowness of their evolution, suffer in their constitution the rebound of all the morbid complication which strikes the earliest infancy. They appear often with structural imperfections and anomolous organization which predispose them to ulterior changes and particularly caries. Their destruction is often very early, and it has been proved that, as soon as the eruption commences, they present caries so rapid and so deep seated that they could not yield to any treatment. It appears to us very important to point out an error so easy to avoid ; moreover, in making at the period of which we treat the exact reckoning of the teeth, we shall recognise that the complement of the infant's teeth which was twenty has risen to twenty-four, and that the twenty first teeth having fallen, the four new ones must be permanent.

Take for example the two formularies compared with each other :

Dental formula at 5 years of age.

$$\text{Inc. } \frac{2-2}{2-2} \qquad \text{Can. } \frac{1-1}{1-1} \qquad \text{Mol. } \frac{2-2}{2-2} = 20.$$

Formula at six years.

$$\text{Inc. } \frac{2-2}{2-2} \qquad \text{Car. } \frac{1-1}{1-1} \qquad \text{Mol. } \frac{3-3}{3-3} = 24.$$

Another feature will strike the observer—the temporary teeth from the moment they have finished their eruption, are, as it is easy to see, perfectly contiguous without any space between, no gap appears during the whole period; they occupy the alveolar process, and these, like every other part of the skeleton, show a progressive development in size. This circumstance, which has already struck many authors, is due to the fact, that the maxillary does not develope in the infant in that part occupied by the temporary teeth, but in that which is comprised between the last of these, of the one part, and the ascending branch of the inferior maxillary at the root of the superior maxillary of the other part. A double physiological process is then performed at this point in the second phase of dentition ; the appearance of a large tooth and the proportionate growth of the jaws.

But in spite of the complexity of these phenomena, authors do not mention any complication, remote or local, as being due to this eruption; not, however, because the series of morbid manifestations of the first years have been exhausted, for the same disturbances as those during the early period again manifest themselves but with less intensity. But attention is engaged now from this aspect of dentition, and no one dreams of incriminating this new phase which *a priori* would have certainly been looked upon as the main cause. There are, however, some complications of dentition belonging to this second period which we ought to point out; but let us hasten to say that they are exclusively local and do not effect the rest of the economy.

(To be continued).

Pass List of Dental Licentiates of Faculty of Physicians and Surgeons of Glasgow.—The following gentleman was admitted a Licentiate of Dental Surgery at the July Sittings of the Examiners, Henry John Kluht, London.

PRESIDENTIAL ADDRESS,

By W. A. HUNT, L.R.C.P., M.R.C.S.,

Delivered before the Annual Meeting of the Western Branch of the British Dental Association.

Mr. Hunt, in his address, said:—I hail with pleasure your presence on this occasion, and offer you my congratulations on our meeting together to cement good feelings and deepen the foundations for further profitable professional and social intercourse. I invite you, for the time, to leave the operating chair and the laboratory, and with me look around and consider our position— as a scientific profession, undergoing healthy consolidation from day to day. Dental surgery has with us, until very lately, been passing through its embryotic condition, and yet needs much careful attention, good pabulum, and some amount of nursing; for there are still manners to be borne with, as we occasionally find when reading our newspapers. But in spite of advertisements steeped in falsehood—coming, no doubt, from the type of man once facetiously described as a "tradesman meek, and much a liar"—(laughter)—and from such men the other branches of the medical profession are by no means free—in spite, I say, of all this, the genuine services of the educated and competent dental surgeon are more than ever in request, and will continue to be so as civilisation advances, and as the true and close relationship of sound teeth to health and enjoyment is better understood. Many of the false lights of quackery will go smokily out; and the true light will be more clearly recognised, and more unhesitatingly followed. (Applause).) So, then, there is every reason why we should march forward hand in hand with the spirit of progress and true science. But it has been the nature of scientific truth in the past to unfold herself slowly, rather than by leaps and bounds. She needed diligent inquiry before she yielded herself up. Indeed, as a rule, the beginnings of science are not sudden and palpable, but slow and insensible. To illustrate my meaning. John Hunter, the first English philosopher who brought to bear upon our subject, with clearness and precision, the results of previous investigations, added an account of a number of experiments made by himself of an instructive character. But he was rather a philosophical investigator than a practical dentist. His book was published in 1778. Twenty-five years more rolled away, and in 1803 was published the celebrated work of Mr. Joseph Fox, who was the first member of the medical profession to become a specialist in our department of practice. Following him, at another interval of twenty-six years, the work of Mr. Thomas Bell appeared; and at a further interval of ten years Mr. Nasmyth's revelations of the microscopical structure of the teeth, which created an immense interest at the time of its publication, but which perhaps few of us now present can recollect. Manuals there have been, and some very excellent; but they mainly reflected the methods and processes of the times in which they were published, and we all know, in relation to these, how swiftly one change follows another. I am speaking, remember, of British foundation books, destined to last through all time. And this brings me to the next publication to which I would allude, as one eminently of that class. After another interval of six years—namely, in 1845—was published that "cherished treasure," as Sir Edwin Saunders calls it in one of his addresses to the British Medical Association in 1881. You will anticipate that I refer to Owen's Odontography. This magnificent work of (now) Sir Richard Owen, K.C.B., was dedicated, and in handsome terms too, to one of your own body, then living in the practice of our own speciality; I refer to the late Mr. Thomas Bell, whose work on the teeth was published (as I before stated) in 1829, and who subsequently became well known as a philosopher of the true type, and eminent as a botanist, and especially as a zoologist. The words of dedication are very simple and pithy—"To the acute observer who was the first to point out pathological phenomena consistent only with a higher organisation and mode of development (of the teeth) than it had been usual to attribute to them, but which it was the chief object of the author to demonstrate as common to the teeth of all vertebrate animals." But why do I dwell upon these points? To demonstrate, by means of the dates I have given, the slow and gradual unfolding of the truth in the past. As relates to our calling, antiquity has given us nothing, except what to avoid. Now, the torch seems fully ablaze, and the world has been further enriched by the publication of the works of Messrs. Tomes (father and son), and some other valuable publications which will occur to us all. Nor must we forget the self-sacrifice and pains of those who have laid our profession under infinite obligations in its organisation, and made this pleasant and, I hope, profitable meeting of to-day a possibility, of which indeed not a conception could have been formed ten years ago as even a desirable thing. Moreover, all things are now altered and altering. The railway and the telegraph have brought mind into so much closer relation to mind, that the re-action has been immediate and immense, and as Sir Edwin Saunders said, "a wave of progress" has reached this country from the other side of the Atlantic which has had its stimulus upon us, and has raised an increasing demand for, and appreciation of, our services. I spoke of our profession as consolidating from day to day; this is due to its legal foundation, planned and laid solidly by able, far-sighted, unselfish men, whose names are never to-day mentioned except with gratitude and admiration, but whose work, I believe, will be yet more praised as the dental history of the future unfolds itself. Legal protection we now have, but I look not to it for much help in eliminating the false and the unworthy; repressive legislation from without, which some so clamour for, will ever be a partial and disappointing remedy. The physician who is content to treat the symptoms rather than the seat of the disease is doomed to failure. Mr. J. Tomes, in my opinion, went to the root of the matter when he said that the dental requirements of the public far exceeded the number of competent men to supply them; we want more educated and competent men.

"'Tis education trains the common mind;
Just as the twig is bent the tree's inclined;"

And to education, broad as well as technical, I look myself for the elimination of the false and worthless from our ranks, rather than to the Acts of Parliament that have been or ever will be. Next, therefore, to compulsory registration, let us rank the preliminary examinations in the subjects of an English gentleman's education, a knowledge of which no man who has any wish to secure social recognition can afford to be without, and which is now happily compulsory on all who shall henceforth enter our ranks. Do we not wish to avail ourselves of all and everything science can offer to relieve suffering humanity? We certainly do; but science has almost a language of her own. For example, take Mayne's "Expository Lexicon," which is a dictionary of words used in medicine and the natural sciences only; search its more than 1,500 pages, each with its double column of words, and show me a single page that does not contain many a scientific word directly coined from the Latin or the Greek. And can we hold converse with Science whilst ignorant of her language? And yet, forsooth, there are men who have the boldness to tell us that Latin and Greek are not only needless, but that the time spent on acquiring such knowledge is merely wasted. I know an industrious lad who was engaged as a mechanical assistant to a friend; on inquiring afterwards of my friend as to how the lad got on, I was told that he was a good workman, but he seemed to spend his wages foolishly, for he had bought a pair of patent-leather boots and a Latin dictionary, &c. Now, no doubt, after a short time all the beautiful polish of the boots was lost for ever, being merely superficial; but the dictionary was the first step to deeper polish of the intellectual faculties which was to increase in brightness and remain for life. That lad is now a qualified dental surgeon, holding a good position, and much respected by myself, who know his worth. Yes, I have more faith in this compulsory educational examination than in repressive measures; and I would advise that our sons or our pupils should pass in Greek, although it is an optional subject. The highest medical examining body in the world, the London University, has made Greek an optional instead of a compulsory subject as heretofore, and, in my humble opinion, very unwisely. In truth the current of knowledge and improvement rushes on so swiftly that those who hesitate to commit themselves to it will soon be left far behind, and serve only the ignoble purpose of enabling us to measure the force and rapidity of the stream. Our own individual credit, and the honour and reputation of our body, demand that we should not be wholly ignorant of the other departments of the healing art, and in general science, history, antiquities, music, the fine arts, &c., as our individual tastes prompt us, we should be students. The late Sir W. Laurence, speaking of such pursuits, when surgery had just began to emerge from a similar condition of chaos as dental surgery has emerged from, uttered words I will quote as *à propôs* to us, substituting dental surgery for surgery:—"You may perhaps, ask whether such pursuits as these lie within our territory, whether they ought not to be deemed foreign to our immediate object, dental practice? They are so, if dental surgery be regarded as a mere manual art, of which operations and outward applications are the sole ends; if dentists feel that they have taken a rank higher than they can maintain, and are disposed to descend quietly into their original condition of a subordinate, mechanical class, content to occupy themselves, under the sufferance and connivance of their elder medical brethren, with the few petty matters which they had disdained as too low and trivial for persons of superior education." But such is not the light in which the Colleges of Surgeons, or we ourselves, or (what is more important) the public regard our profession. Said the wise man "Seest thou a man diligent in his calling? He shall stand before kings; he shall not stand before mean men," or obscure men, as the margin has it. Making the necessary allowance for oriental imagery, the truth of the proverb is conspicuously recognisable to us all; and, to slightly alter Shakspere,

"Naught can make our interest rue
If to ourselves we rest but true."

Let us, then, strain every nerve, not only to advance each branch of the profession we have chosen, but to advance our own individual culture as much as we can; thus shall we enjoy the greatest pleasure which upright and honourable minds can conceive—that of increasing the usefulness, and thereby raising the credit and respectability of the body to which we belong, and so prepare for ourselves at all times a pure source of the most satisfactory reflections. (Applause.)

THIRTEENTH CONGRESS OF THE GERMAN SURGICAL ASSOCIATION.

THE SUBSEQUENT HISTORY OF AN EXTRACTED AND RE-IMPLANTED TOOTH.

By A. Bidder, of Berlin.

The right incisor tooth of a young lady was removed on account of a series of gumboils, but, as both the crown and root appeared perfectly healthy, it was at once re-inserted into the alveolus. The tooth had been previously cleared of all the hanging shreds of connective tissue, and washed in a solution of carbolic acid; the alveolus had also been syringed with the same lotion. In the course of a few days the implanted tooth became perfectly firm and differed in no respects from any of the other teeth. Three years afterwards, however, the crown began gradually to get loose and ended by falling out. On examination it was found that the root had almost entirely disappeared having been absorbed by the granulations with which the alveolus had become filled. The explanation of this case seems easy, for the re-inserted root of the tooth acts as a foreign body and leads to the development of granulations from the wall of the alveolus. These by their growth into the root tend at first to steady it, but their further progress is attended with its entire destruction.

It would thus appear that the well-known process recommended by American dentists, some of whom are reported to have extracted teeth and to have stopped them on their work table before proceeding to re-insert them, does not offer any hope of a lasting result. Even a temporary success may, however, under certain circumstances, prove both useful and welcome.

ON THE MORPHOLOGICAL BEARINGS OF FISSURES IN THE JAWS, LIPS AND FACE.

By DR. ALBRECHT OF BRUSSELS.

A. FISSURES IN THE JAW :—CLEFT PALATE.

1.—*Position of Fissures in the Jaw.*—Cleft palate does not occur as is assumed in Goethe's theory, and as stated even quite recently by Kölliker, between the superior maxilla and the intermaxillary bone, but in every case between the inner and outer intermaxillary bones.

2.—*Number of Intermaxillary Bones.*—There are not, as has been usually stated, one intermaxillary bone on either side, but two, or altogether, four intermaxillary bones, thus: an inner and an outer one on either side.

3.—*Co-Existence of the Incisor Suture and Cleft in the Jaw.*—According to the old theories, this co-existence could not occur, for a cleft in the palate was the expression of the absence of the incisor suture. Quite recently Kölliker has peremptorily maintained that this co-existence, with which Goethe's theory must be admitted to stand or fall, never does occur. Albrecht is in a position to show most positively this co-existence in the skull of a horse, and in two human skulls; which will be shown to the meeting.

4.—*Morphological Import of the Incisor Suture.*—Morphologically the incisor suture represents the junction (seam) between the external intermaxillary and upper jaw bones.

5.—*Morphological Import of Cleft Palate.*—Cleft palate represents morphologically a fissure between the inner and outer intermaxillary bones.

6.—*Different Kinds of Cleft Palate according tc the number of Upper Incisor Teeth.*—There are two kinds of cleft palate, the tetraprodontal and hexaprodontal.

7.—*Tetraprodontal Cleft Palate.*—In this form of cleft palate we find externally to the fissure the two milk molars, the milk canine and one milk incisor, of these the molars and canine are contained in the upper maxilla, the incisor in the outer intermaxillary bone. In this form also, we find one milk incisor tooth internal to the fissure in the inner maxillary bone. In the tetraprodontal form of cleft palate in the adult, the three molars, the two pre-molars, the canine and one incisor lie external to the fissure; one incisor tooth internal to it. In this variety, therefore, there are either four or seven teeth or alveoli to the outside of the fissure and one tooth or alveolus only to the inside. The formula of the teeth, or alveoli of the milk dental apparatus in cases of tetraprodontal fissure of the jaw would thus be 4 — 1; in the adult variety 7—1. Albrecht has called this form *tetraprodontal* because in the cases where the fissure is double, four teeth are found in front of it.

8.—*Hexaprodontal Cleft Palate.*—In the hexaprodontal form of fissured jaw we find to the outer side of the fissure two milk molars, one milk canine and one milk incisor, and two milk incisors to the inner side. In the adult hexaprodontal cleft palate, the three molars, two pre-molars, canine, and one incisor are external to the fissure ; on its inner side are two incisors. Externally we have, therefore, four or seven teeth or alveoli, and internally two. The formula of the milk teeth or alveoli, would thus be in this variety, 4—2 ; that for the permanent teeth 7—2. Albrecht has given the name of *hexaprodontal* to this form of defect for when it is double, six upper incisors are found in front of the fissure.

9.—*Formula of the Teeth in Tetraprodontal and Hexaprodontal Cleft Palate in Man.*—(1.) Milk teeth—Tetraprodontal form 4—1; hexaprodontal form, 4—2. (2.) Permanent teeth. —Tetraprodontal form 7—1 ; hexaprodontal form 7—2.

10.—*Features Common to both the Tetraprodontal and Hexaprodontal forms of Fissured Palates.*—In both forms in children four teeth are external to fissure and in adults seven.

11.—*Distinctive Features.*—In the tetraprodontal form there is one incisor tooth in the inner intermaxillary bone on either side, in the hexaprodontal there are two incisors in each corresponding bone.

12.—*Names of the Upper Incisor Teeth as found in Cleft Palate and in the Normal Jaw.*—Albrecht calls the incisor tooth lying next to the canine the *præ-canine*, the one close to the suture (symphysis) of the two inner intermaxillary bones he calls *parasymphysis ;* the tooth, which in cases of hexaprodontal fissure is external to the parasymphysis is called the *proparasymphysis.*

13.—*Relation of the three Incisor Teeth to the Intermaxillary Bones.*—The præ-canine is always contained in the outer intermaxillary bone, the parasymphysis and proparasymphysis (in those cases where it exists) lie in the inner intermaxillary bone.

14.—*Relation of the three Incisors to Fissure in the Jaw.*—The præ-canine is always external to the fissure, the proparasymphysis (when present) and parasymphysis always internal. In both tetraprodontal and hexaprodontal forms the præcanine is thus external.

15.—*Position of the Cleft in the Jaw with respect to the Upper Teeth.*—The fissure always runs between the incisor teeth, to its outer side in all cases is the præ-canine, to its inner side in tetraprodontal cleft palate is the parasymphysis, and in the hexaprodontal form the parasymphysis and proparasymphysis.

16.—*Mistakes of Previous Writers.*—If we look at figures 48 and 47 in the second edition of König's Handbook of Special Surgery, we see that the formula given there is 4—1, which means that the fissure runs between the middle and lateral incisor teeth, while in the text itself König states that the cleft always runs between the incisors and eye teeth. Klebs writes to the same effect in his "Handbook of Pathological Anatomy," (Berlin 1869) vol. 1, page 157.

17.—*Morphological Correspondence of the Three Different Incisor Teeth met with in Man.*—In hexaprodontal cleft palate, the parasymphysis represents the first incisor, the proparasymphysis the second, and the præ-canine the third incisor; and thus the præ-canine in hexaprodontal cleft palate is homologous with the præ-canine in tetraprodontal, and this again is homogolous with the præ-canine in the normal human jaw; so that in reality both in tetraprodental cleft palate and in the normal human jaw the præ-canine is the third incisor tooth. In the normal human jaw the upper middle incisor thus represents the first incisor ; the upper lateral incisor, the third, while the true second incisor is wanting in man. This second incisor re-appears in hexaprodontal cleft palate as the proparasymphysis. We frequently find, even when there is no cleft in the palate, six upper or six lower incisors. Albrecht intends to treat of these cases in his forthcoming work on the Mammiferæ.

(To be continued.)

OBSERVATIONS ON THE TEETH OF CERTAIN RODENTS.

By E. G. Betts, M.R.C.S., and L.D.S., Eng.*

(Concluded from page 691.)

I need hardly remind my hearers that in the more typical rodents the enamel is exceedingly thick on the anterior surface of the incisors, but comes to a more or less abrupt termination a little way round on the lateral aspect of the tooth, either standing out as an abrupt plaster-like mass, or tapering off to a more or less acute point, or, as in the common rat, being accommodated in a depression of the dentine. I have made diagrams of these various forms of termination, as seen in transverse section under the microscope, and you will observe that the hare gives this diminution in such a gradual manner, that it is almost impossible to say where, if at all, the enamel ends ; but that it does end I think may be seen in a very thin section, and I have several that seem to me to show it

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* A paper read before the Odontological Society of Great Britain.

Unless the section be very thin, the enamel appears to be continuous with a thin transparent line, which passes round the back of the tooth, and this is what has been regarded as a thin layer of enamel.

With a thin section and oblique light, on close inspection, the thin transparent layer may be detected passing on to and slightly overlapping the termination of the enamel, in the manner it is plainly seen to do in some other rodents, the chinchilla, for example. Moreover, this thin transparent layer is just as marked in many other rodents' incisors, so that they might with equal propriety lay claim to an enamel investment. But from the relation of the various tissues which I have described, and arguing from analogy of other teeth where in all cases the cementum takes a position external to the enamel, and overlaps it, as it does in human teeth to a small extent, we have good reason for uniting with Mr. Charles Tomes in his suspicion that the bright transparent line is not enamel, but cementum.

On examining the tooth germs of fœtal hares and rabbits, to see whether the enamel epithelium extended round the back of the tooth, and if so, whether of such degree of development as to be likely to form enamel, I found that in very young germs there was an investment of enamel cells, though of a rather less perfect description, and forming a shallower layer on the back than on the front of the germ, yet such as one might well give credit for forming enamel. I found, however, in fœtal (hare) germs of greater maturity, and in a newly born rabbit that the enamel cells terminated just round the corner of the tooth, diminishing in size somewhat rapidly, at about the position where the enamel of an adult tooth merges in the thin transparent layer before mentioned. The result of these observations is the assumption that at a very early stage of development, the enamel organ forms a complete cap to the dentine as in other animals, and perhaps at first even deposits a cap of enamel, but that it soon wastes and ceases to be present in the subsequent continually growing tooth. This is what one would rather expect to find from what one knows of the behaviour of enamel epithelium where it does not intend ultimately to produce enamel, and which has been so clearly set forth by Mr. Charles Tomes, in speaking of the development of the enamel of fishes, and of the eel more particularly. In some sections taken transversely of adult jaws, with the teeth *in situ* and decalcified, I observed that whilst a gap was exhibited on the anterior border of the tooth where the enamel had been dissolved away, no such gap appeared on the posterior aspect of the tooth, but, on the contrary, the connecting fibres of the periosteum ran straight on to, and seemed firmly inserted upon, the decalcified matrix of the tooth. This leads me up to what, to my mind, seems the strongest proof of all of the non-existence of the posterior layer of enamel in Leporidæ, and one which I think quite conclusive. It is the result which one obtains by treating a fresh section of hare or rabbit tooth, whilst under a microscope, with a strong mineral acid.

The section should be fresh, or, better still, have remained in alcohol for a few hours ; it should include the alveolus and intervening periosteum. By the time it has been rubbed pretty thin on the hone, the alveolus will probably, unless considerable care has been exercised, have been torn away from the tooth, but leaving the peridental membrane firmly attached to the tooth (this itself is worthy of notice, in passing, as one could scarcely imagine so close an adhesion to enamel alone). If the tooth be now placed in a drop of water on a slide under a cover-glass, so that the point of suspected termination of the enamel, together with the continued transparent layer, be within the field, and a drop or so of pure hydrochloric acid added with a glass rod at the upper border of the cover-glass, bubbles of glass will soon appear and be rapidly evolved from the decomposing enamel and dentine, lifting and pushing aside as they make their escape the thin layer of soft tissue from the margin of the tooth, and presently the enamel has entirely disappeared, leaving the soft tissues which formerly adhered to it entirely separated from the dentine up to a certain point, viz., that at which the enamel was suspected to terminate : here it now presents a *cul-de-sac*, nor can any reasonable amount of force, such as one can produce by violently agitating the cover-glass, and which is sufficient to make the loose soft tissue lash violently to and fro, induce it to part company with the tooth to any further extent, which, had there been even the thinnest layer of enamel intervening, it could not fail to do. I have made a drawing of such a section as I described, and I think there need not be stronger proof of the absence of enamel from the back of the incisors of Leporidæ.

To sum up, therefore, we find on examining fœtal teeth that in earlier stages the enamel cells completely surround the tooth, being, however, rather less developed on the posterior aspect ; but that in later stages of the fœtus, as also in the newly-born animal, it is distinctly confined to the anterior aspect of the tooth, In examining hard sections of adult teeth we find similar arrangement of the tissues, and anatomical appearances similar to those observed in other rodents, only in a less marked degree; and that in preparing such sections the peridental membrane shows marked unwillingness to leave the back of the tooth; that in sections hardened in chromic acid and decalcified, the membrane of attachment is seen to run on from the alveolus to the matrix without appreciable interruption; and added to all this we find, on watching the process of decalcification, that the soft tissues are separable to an extent corresponding with the apparent termination of the enamel, and no further. I think, therefore, Gentlemen, that you will endorse my view, that the Leporidæ, in common with all other rodents, possess *no* posterior investment of enamel upon their incisor teeth.

INCIDENT IN PRACTICE.—DR. BŒDECKER gives the following interesting incident of practice:—

"A little more than a year ago a young gentleman 18 years of age, of good constitution, came to me with the left upper first molar very badly decayed, and I advised him to have the roots removed. When this had been done he came back and told me that every other day or so he had a very bad taste in his mouth. I examined the place and found that there was trouble with the antrum. I treated the antrum for about a week, but I found the nasal opening closed. I could inject only a few drops of liquid and this would drive pus back. I then made an apparatus consisting of a platinum tube, which was inserted through the root-opening and bound to the bicuspid. This was in there about two weeks and the antrum was cured, but the nasal opening was not reëstablished.

"The history of the case is, that the gentleman had nasal catarrh about two years, and his speech was somewhat marred by talking through his nose, which I attribute, at least partially, to the closure of the nasal opening. In the treatment of this antrum I used several remedies. Five per cent. and then ten per cent solution of chloride of zinc. This had a very good effect upon the inflammatory condition. I also syringed the cavity out with three per cent. solution of boracic acid. I also used iodoform in ether, and this seemed to stop the exudation more than anything I had used before. At the present time this case is in the same condition, with the opening closed, and I have proposed the usual operation to reëstablish the opening; otherwise I am afraid the catarrh will not be cured."

Reflections from the Surgery.

RARE AFTER EFFECTS OF NITROUS OXIDE,

Under the care of G. H. Crowther, D.D.S., L.D.S., &c.

I notice, in the *British Journal of Dental Science*, for August 1st, an article on the after effect of nitrous oxide administered to a patient of Dr. Karl Goebel.

The following case occurred in my practice some time ago similar to above.

A young, robust gentleman, of nervo-sanguine temperament, whiskers and moustache inclining to sandy, 31 years of age, called upon me, suffering very acutely from pain in his face. Upon examination, I found it proceeded from a superior left canine, which was partly necroced and he wished to have it removed under the influence of nitrous oxide gas.

The operation was successful, anæsthesia perfect, and action of pulse and lungs good. After the removal of the tooth his belligerent faculties became immediately excited, and a regular fighting movement followed. He dashed my assistant as well as myself on one side, took a tumbler glass from the spittoon stand, ran to the door, opened it, and made his way to the court house a few yards distant. He then threw the glass with great violence to the ground, and began to dance, which was witnessed by a number of spectators. With great difficulty, and after much struggling we got him into the house, when he soon regained consciousness and seemed none the worse. Mr. T—thought he had been dancing before a large audience for a wager. I asked him how he felt during the operation. He said "Oh, I don't know, doctor; I felt so happy, as if some one was drawing me up to heaven and another pulling me back." He informed me that he had no recollection of his eccentric performance and walked home as if nothing unusual had occurred.

This is the first case of the kind, since I began to use the gas in 1868.

EXTIRPATION OF AN EPULIS OF A FIBRO-MYELOID CHARACTER FROM THE LEFT PRÆ-MOLAR REGION OF THE SUPERIOR MAXILLARY BONE.

(A case under the care of Joseph Abbot, Esq., L.D.S.I., Exeter).

MRS. G. ætat., 46, the mother of a large family: nervous temperament; poor appetite, with an intense thirst, consulted me with reference to a tumour in her mouth, which had gradually grown to such dimensions, as to interfere very materially with respiration, mastication and sleep. On lying down at night she experinced the feeling that if she went to sleep she would not wake again: the difficulty of breathing being much increased while in the recumbent position.

When seen, she appeared in a state of nervous trepidation, which was much aggravated by intermittent pains about the situation of the tumour, also in the temporal region. She stated that about seven years ago, she went to have three decayed teeth removed, of which one was extracted, and two broken off at the margin of the gum. For some time afterwards she suffered considerable pain, but eventually the gum covered the stumps, and in a couple of months from the time she was operated upon, the gum began to "come down", and had continued to do so up to the present time. She had, a couple of years previously, consulted her doctor, who had lanced the gum and painted the "enlargement" but growth nevertheless continued. On examination, I found the fances, tonsil, and pharynx normal, high temperature of the mouth and a white, dry and furred tongue. Pendulous from the space between the canine and second molar tooth was a large liver-coloured lobulated mass, mottled in appearance, rather larger than a walnut. The gum was much conjested and expanded, and the base of the tumour was found to cover the space between the above mentioned teeth. As the patient averred that she was constitutionally strong, although the aspect of her countenance betrayed nervous fear, and dispnœa was apparent—due, as I considered, to the presence of the tumour, which diagnosis subsequently proved correct—I resolved to operate.

Everything being in readiness, the patient was seated in a chair, the neck covering was removed, a good light being afforded from an open window in front. An upright position was chosen, mouth wide open, the head and hands being held by assistants. With a short curved bistoury I made a clean sweep through the base of the tumour from behind forwards and touched bone; this necessitated another cut from before backwards in a circular direction with a pair of bone forceps applied beneath the base. I now cut through the osseous obstruction and removed the tumour. Hæmorrhage being profuse was temporarily checked by pressure and afterwards with Ferri sesquichlor, applied by means of a small sponge. Upon further examination three stumps were discovered and duly extracted : those of both bicuspids and the anterior fang of the first molar. I incline to the opinion that the two fangs now missing comprised the " tooth " reported to have been extracted seven years ago, as stated by the patient. I now pared down the edges of the alveolar borders to a depth of an eighth of an inch, and after having well cleansed the wound I syringed the cavity with a solution of carbolic acid (1—15) afterwards plugging well with wool soaked in this solution. In three days the wound was going on nicely, and now, six weeks from date of operation, it has healed with no symptoms of recurrent growth. No anæsthetic was used, and the patient bore up well, and expressed her gratitude especially for the great relief almost immediately experienced in her respiratory powers. At the conclusion of the operation, which occupied fifteen minutes, I administered two ounces of brandy and a teaspoonful of sal volatile in a tumbler of water, and ordered her a brisk cathartic to be taken the same night.

Note.—Upon minute examination, I discovered small spiculæ of bone in the base of the epulis. Under the microscope both fibrous tissue and myeloid cells were plainly distinguishable.

Royal College of Surgeons, Edinburgh.—During the July sittings of the Examiners the following gentlemen passed their first professional examination for the Licence in Dental Surgery:—Benjamin John Douthwaite, London; Thomas Prittie Ritchie, Edinburgh; David Browne, Montrose; William Hopper Harrison, British Guiana; Andrew Burns, London. James Main Nicol, London, passed his final examination and was admitted L.D.S., Edinburgh.

Departure of Mr. Coleman.—Mr. Coleman's absence will be regretted by all. His failing health compels him to seek more genial climes than ours. With him he will take the esteem and well-wishes of very many, both among his personal friends and his late pupils. We trust it will not be long before Mr. Coleman will return to revisit his native land.

A Translation of Mr. Christopher Heath's "Diseases and Injuries of the Jaws," is appearing in "Le Progrès Dentaire."

British Journal of Dental Science.

LONDON, AUGUST 15, 1884.

DENTAL HYGIENE.

THIRD ARTICLE.

In preceding papers we have dealt with the common impurities found in the consulting rooms of dentists. We have pointed out that pure air is in most cases unknown, and further it has been our contention that even when the air of the atelier is pure at the commencement of the day's work, it ceases to be so after a few hours. Further, the dentist, by the position of his patient, inhales the latter's breath. This inhalation is deleterious. A further aspect of want of hygiene in ordinary dental practice is the persistence in a constrained posture. A speaker at the recent debate upon this subject, drew attention to the habit we all have of fixing the great central muscle of the body the vaulted diaphragm whenever we perform any feat of strength, or any act of nice manipulation. It is possible, the speaker says, to rid oneself of the habit, but to us, considering the physiology of all our acts, and coupling such with all the anatomists tell us, this seems open to question. All are aware that the *point d'appui* of all muscular effort is the bony spinal column. It needs but a glimpse at the articulated vertebral column to show that great and delicate muscular adjustments need be made to fix this bony column in its various postures. The postures of the spine are as numerous as are the movements we evoke in the conduct of our everyday life, and these all call into action the diaphragm. View the spine of the walker, the gymnast, the turner at his lathe, and compare its swaying curves, its bold yet fine adjustments with the corresponding stiff efforts of mere mechanically working limbs jointed to a rigid automatic central axis. These sinuous changes in posture can only be accomplished by habit of muscle, by nerve-energy flowing down well worn nervous paths.

For perfection, the adjustment of muscle and nerve must be easy and habitual, but further it needs relaxation. The stretched muscle increases in elasticity, tax its yielding capacity too far and you impair its vitality. The strain pre-ordains morbid growth changes in the muscle, and its resiliency gives place to fibrotic degeneration.

The muscles perform yet a further function and one the bearing of which upon health and happiness cannot be over estimated. The chief propelling force at work in aiding the onward flow of blood through the veins, rests in the contraction of the muscles. The veins are very abundant, they form cross bars about the muscular fibres and being valved, no back flow of blood can occur and hence every time a muscle contracts, blood is squeezed onward toward the heart. When, however, the alternate relaxation of the muscle does not occur, the blood can no longer circulate. What must inevitably occur does then take place and stagnation of the venous circulation obtains.

Now let us ask ourselves what ensues when the venous circulation becomes impeded.

Varicose veins, swollen, painful ankles and feet, hæmorrhoids or piles, varicocele, are all predisposed to, if not actually excited by prolonged venous stasis. And if it should seem unlikely that mere muscular tension could be enough to cause varicosities in veins, we have not far to seek for other adjuvants in consummating this result. The fixation of the diaphragm which we have shown, occurs when we desire to steady our spinal column, acting in conjunction with the laryngeal muscles subjects the lungs to great pressure, a pressure which tells upon the venous vessels which cover the air cells. But the diaphragm acts in another way, its fixed position when it is accompanied by a contraction of the abdominal muscles must press upon the viscera contained in the abdominal cavity. The viscera in question become congested through the accumulation of contained venous blood and hence are initiated complaints whose name is legion. Congestion of liver, "backache," from congested kidneys, constipation from congested bowels, one and all are resultants from postural departures from the laws of hygiene. The cramped position of the dental thorax, so common among dental practitioners, leads inevitably to a passive congestion of the thoracic viscera; the lungs, heart et cœt., and eventually sows the seeds of pathological changes in their actual structures. So it happens that in the case of practitioners of dentistry, who we have shown are subjected to unusual opportunities of infection, there are conditions at work which pre-eminently predispose to the liability of infection. In fine, the constrained posture leads to impairment of circulation, to passive engorgement of extremities and viscera; it pre-disposes to inflammation of all kinds; it leads to cold extremities, piles, varicose veins, headache, muscular lassitude, muscular tremor. The particular chain of symptoms which may occur must depend upon the individual susceptibility—the weak point in the particular person—and also upon the kind of work which demands the bulk of the individual's time and attention.

DISCUSSION AND CRITICISM.

Hard and fast lines are always difficult to draw. He who criticises is not a little apt to forget that his own remarks are as open a butt for an adversary's onslaught as are those of his neighbour. How far personalities are permissible in criticising the work of men well known and well honoured in a profession, must ever remain matter of taste and breeding. To us it seems alike unnecessary and bordering upon ill nature for one writer to refer to another in passages so unguarded as those which Mr. Sewill sees fit to indulge himself, when referring to Mr. Coleman's writings upon Dental Caries. Even if Mr. Sewill's diction is itself wholly free from grammatical blemishes, which perhaps impartial critics may doubt, surely it can subserve no useful purpose for him to drag into a would-be ridicule passages from the writings of a man who has so justly earned for himself the esteem and affection of the profession which he has so long adorned. That truth is dear to the author of "A Critical Summary," we doubt not, but we aver that truth smiles more pleasantly when she is out of the company of rancour. Mr. Sewill says, in his recent papers on "Dental Caries, a Critical Summary," "It is indeed difficult to criticise with patience a writer like this, who, not recognising his utter incompetence—literary as well as scientific—for his self-imposed task, etc." Language which can only recoil upon its writer, and force the reader to question whether it is really called forth by scientific acumen or is elicited by sentiments smacking more of human frailty than dispassionate criticism. Whether Mr. Sewill's gathering together of his much vaunted "facts" will bear the test-law of the critics of the next fifty years, time alone can decide, that his language will meet with a universal reprobation all right thinking men will not hesitate to decide.

Self Sacrifice.—According to the *Journal of the British Medical Association;* to a young medical student has offered himself to M. Pastuer as a subject for his experiments with rabies, which are to be made before a Government Commission. The student desires to be inoculated with the virus, and insists upon being given the preference in this distinction, expressing a heroic willingness to die, if need be, in the interests of science. Such a sacrifice is, however, obviously foolish and uncalled for, in France at least, where frogs and rabbits are not protected by deaths from the administration of Anæsthetics.

In what Order Caries Attacks the Teeth.—The remarks of Dr. Ottofy, made before the Illinois Dental Society, have an especial interest in connection with a paper we published some issues back, in which Mr. May gave his experience of the order in which the teeth decay. Dr. Ottofy says the second molars are more frequently carious before the age of puberty than the first molars, which latter, I believe, bear the reputation of being the most frequent victims of the ravages of caries. Caries attack the teeth in the following ratio :

Oftener the second molars, than the first molars, next the superior incisors, superior bicuspids, inferior bicuspids, and lastly the canines and the lower incisors, which latter two classes are least frequently attacked.

It is a matter of great regret that we find a person described as a "surgeon dentist," found by a coroner's enquiry guilty of wilful murder. The F. A. Bayntun, stated to be a surgeon dentist in Cardigan, does not appear upon the Dental Register, and so, is of course, not a legally recognised practitioner. The details of the melancholy story have already seen the light in the daily papers.

Abstracts of British & Foreign Journals.

INDEPENDENT PRACTITIONER.

FERMENTATIONS IN THE HUMAN MOUTH ; THE INFLUENCE OF ANTISEPTICS, FILLING MATERIALS, ETC., UPON THE FUNGI OF DENTAL CARIES. By Dr. W. D. Miller, Berlin, Germany.

(Continued from p. 717.)

Having established that caries of the teeth is the result in part of the action of ferment acid or acids in the care of the dentine, followed by the action of the ferment organisms upon the decalcified tissue, we have to determine, first, how to counteract this action and next, how to prevent their production ; secondly, how we may save the already decalcified dentine from complete destruction.

There are three methods,

1. By repeated, thorough, systematic cleansing of the oral cavity and the teeth, this reduces the amount of fermentable substances in the mouth and the number of ferment organisms,

2. By the repeated application of alkaline substances we neutralize the acids before they have acted upon the teeth.

3. By the use of antiseptics we may destroy the organisms themselves. This method is especially applicable in the

second stage of dental caries (*i.e.*, following decalcification), to this we shall give exclusive attention. There is no known solution, alkaline or antiseptic, applicable in the human mouth, which will penetrate between the teeth or to the bottom of fissures and cavities, when these are filled with food, hence thorough cleansing of the teeth is absolutely indispensible.

Dr. Miller believes that by allowing the antiseptic to act upon the fungi in their natural medium, saliva, he obtains results of more practical value than by experimenting upon them in artificial solutions, and in pure cultures, neither of which eve occurrs in the human mouth. Since the fungi can attack the teeth only after a partial decalcification, we have in the first place to demand of an antiseptic, not so much that it destroys the fungi, as that it prevents the production of acid by them. Consequently, if an acid reaction failed to appear in a solution of saliva and sugar to which a certain antiseptic had been added, as soon as in a like solution to which no antiseptic had been added (control), it was taken as evidence of the activity and value of the antiseptic used. The microscope then is used to verify results.

In the following table there is indicated the percentage of each antiseptic experimented upon which must be present in sweetened-saliva solution, to prevent the appearance of an acid reaction in twenty-four hours, or in case of alkaline or acid antiseptics, to prevent the development of the characteristic fungi in the same time.

	PRODUCTION OF ACID (Development of Fungi)	
	PREVENTED.	RETARDED.
Bichloride of Mercury	1–100,000	1–500,000
Nitrate of Silver	1–50,000	1–100,000
Iodoform	1–5,000	1–10,000
Naphthaline	1–4,000 (?)	1–9,000
Iodine	1–6,000	1–15,000
Oil of Mustard	1–2,000	1–5,000
Permanganate of Potas	1–1,000	1–2,000
Eucalyptus Oil	1–600	
Carbolic Acid	1–500	1–1,000
Hydrochloric Acid	1–500	1–1,000
Phenylic Acid	1–200	1–500
Liquid of Agate Cement	1–250	
Liquid of Excelsior Cement	1–225	
Lactic acid	1–125	1–250
Carbonate of Sodium	1–100	1–200
Salicylic Acid (Conc. alcohol sol.)	1–75	1–125
Alcohol	1–10	1–20

Hence bichloride of mercury is about two hundred times as powerful as carbolic acid. Weak solutions of carbolic acid are useless. One one-thousandth is only one-fifth as powerful as pure carbolic acid, which in many cases may be used with impunity. It is consequently useless to attempt to introduce the sublimate solution for the purpose of sterilizing root canals, cavities before filling, etc., unless we may use at least a one-half per cent., if not a one per cent. solution. Dr. Miller has used a one per cent. solution of bichloride of mercury for treating root canals, and wipes out cavities before filling with a two per sent. solution. Such a solution cures buccaul aphthæ.

As a mouth wash he uses a one-tenth per cent. (1-1,000) solution ; Dr. Miller would not, however, recommend it to patients in this strength. The disagreeable and lasting taste, is difficult to disguise, and produces an immediate increased secretion of saliva and mucus, which is very annoying. A one-fiftieth per cent. solution (1-5,000) may eventually be brought into use ; in this concentration it is four times as powerful as a one per cent. solution of carbolic acid. The very high antiseptic power of nitrate of silver is particularly noteworthy. It might be employed in place of the much more dangerous mercuric chloride.

To be continued.

DENTAL COSMOS.

Cosmoline in its relation to Dental Therapeutics, by A. B. Harrower, D.D.S., Philadelphia.

This paper opens with a description of Cosmoline. It is, we are told, one and the same with Petrolatum, Petroleum, Vaseline, et cœt.

The Petroleum oils have their lighter constituents removed by distillation, and the residue is subjected to a further distillation at a higher temperature. The distillate is then filtered through animal charcoal at a temperature of from 110° to 130° F. The first portion of the filterate is used as cosmoline, its consistence being adjusted by the addition of paraffin.

The physical properties of cosmoline are :—it is yellowish, fat-like, insoluble in water, amorphous, tasteless and odorless. It is soluble in æther, chloroform fixed or volatile oils and in benzol and benzine. It is a hydro-carbon.

Fluid cosmoline (Petroleol) is distilled over at a lower temperature.

Cosmoline does not become rancid, it is bland and unirritating.

In dental therapeutics it has been suggested as an excipient for Iodoform, arsenious acid, inspissated canal pastes, and for saturating cotton canal dressings. ℞. Iodoform, 20 grs., Fluid Cosmoline, 10 drops, Oil of Cinnamon about ¼ of a drop, the iodoform to be ground very fine. This formula, it is said, is superior to the original one of Professor Flagg which contained Glycerine as a vehicle with Tannin. When cosmoline is employed the consistence isadmirable, the paste is worked with the utmost facility and does not undergo any change.

When firmer consistence is desired, the fluid cosmoline should be replaced by the solid.

The ordinary arsenical paste is liable to the settling of the arsenic which necessitates frequent stirring—this drawback is obviated by the adoption of cosmoline :—thus, ℞. Arsenious acid 1 part, Acetate of Morphia 2 parts, Plain Cosmoline q. s. to make a paste of the required consistence. ℞. Arsenious Acid 5 grains, Acetate of Morphia 10 grains, Fluid Cosmoline 18 drops. In either case—mix thoroughly.

THE NEW ENGLAND JOURNAL OF DENTISTRY.

THE SEPTIC THEORY OF DENTAL CARIES, by F. SEARLE, D.D.S. Springfield, Mass.*

Quoting Underwood and Milles to the effect "We consider that caries is absolutely dependent upon the presence and proliferation of organisms," our author proposes to call their view "the septic theory." Reviewing the position, Dr. Searle asserts that Milles and Underwood failed to appreciate the work of Dr. Bödecker, of New York, which demonstrated the distribution of living matter in the bone, dentine, enamel and cementum ; and that of Dr. Abbott, which showed that inflammation does occur in the diseased fibrils.

"Underwood and Milles saw the irritant but not the inflammatory appearances of the fibrils."

Passing on to the chemical side of the question, the action of ferments is referred to. Ferments, as living organisms, increase at the expense of the substance undergoing fermentation. "True fermentations are physiological processes," they are "the direct consequences of the processes of nutrition, assimilation, and life, when they are carried on without the aid of free oxygen, or as the result of life without air," (Pasteur.)

"Tracing the history of the development of the theories of sceptic infection, Lister, who, we are informed, by some extraordinary mistake, is "an eminent French Surgeon," and Lister's methods are said to have advanced our knowledge of dental caries. In 1873, appeared the work of Liebig and Rottenstein, which "first put into definite form" the relation of the germ theory to dental caries. In 1881, Underwood and Milles, first paper appeared.

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* Read before the Conn. Valley Dental Society.

Their first paper contains the following conclusions :

1. "We consider that caries is absolutely dependent upon the presence and prolification of organisms ; that these organisms attack first the organic material and, feeding upon it, create an acid which removes the lime-salts."

2. "That suppuration of the pulp and its sequences, such as alveolar abscess, depend also upon the successful working of organisms."

In their second paper they say : "We are anxious that you should keep clearly before you four main issues upon which all the theory which we suggested to you in 1881 depends :

1. "That certain forms of micro-organisms, viz : Micrococci, oval bacteria and short bacilli, are invariably present in carious dentine."

2. "That these micro-organisms extend into the tissue as far as does the caries."

3. "That no agent can be made to produce a change resembling caries in the absence of such micro-organisms."

(The fourth is omitted).

They add : "We feel convinced that the process, to be effective, must be carried on in a living mouth, probably because that is the only situation in which the special germs are really active. Analogy seems to warrant this deduction ; but," "all we claim for the germs is, that without them and their products the process could not go on at all," "and the dental pathology of the future must include them among the most powerful factors in the production of this disease."

(To be continued.)

Dental News.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Discussion upon Mr. Betts' Paper on "Teeth of Certain Rodents."

(Continued from page 726.)

Mr. Arthur Underwood said he thought Mr. Betts was to be congratulated on having very completely established his point—a point which, though at first sight unimportant, was of considerable zoological interest. His own attention had only been called to this matter quite recently by hearing that Mr. Betts was investigating it, but feeling anxious to observe for himself, he obtained a young rabbit, and cut some sections of the teeth. These were cut fresh and examined at once, and the result of his observations, though far less numerous and carefully made than those of Mr. Betts, was identical with that stated in the paper. He thought the abrupt ending of the enamel was clearly shown in some of his own preparations, but he had not thought of the ingenious application of strong acid which Mr. Betts had made use of to demonstrate this point still more clearly.

Mr. Charles Tomes said the point which Mr. Betts had investigated was really of considerable importance in itself, and still more so because, having once been stated and published on apparently good authority, it had been accepted as true and copied from one book into another, until, as he was surprised to find when his attention was called to it, this statement as to the complete investment of enamel on the teeth of the Leporidæ had even made its appearance in some of the more recently published students' text-books as if it was an unquestionable fact. It was therefore high time that it was contradicted. The widely published statement that the ancient Egyptians were acquainted with the art of filling decayed teeth with gold, appeared to have got about in much the same way. For on tracing it back to its source he found, after taking a considerable amount of trouble, that the statement rested on the authority of a man who wanted to sell a mummy, and that the supposed specimen of gold filling had not actually been seen by the person who published the statement.

The zoological relations of the Rodentia formed a very puzzling chapter in Natural History. We had a precise knowledge of the ancestry of the horse, and could trace the stages by which its hoof was derived from the foot common to a large number of mammals, and the same might be said of its teeth. So with regard to many other special adaptations of particular organs ; thus we could trace the origin of the snakes' poison fang. But of the genealogy of the rodent's incisor we knew nothing at all ; it appeared on the scene, so to speak, in the full development of its peculiarity. Had it been true that the Leporidæ possessed teeth with a complete investment of enamel, this would have indicated a transitional form, and would have supplied one of the missing steps. But Mr. Betts had disproved this assertion.

Possibly some of the missing links might yet be supplied by a careful study of the Marsupial class, seeing that in them we have a group of creatures which have adapted themselves to a variety of habits and of food, some of whom approximate in a rough way towards a rodent type of dentition in the great development of their incisors, the wide gap behind them, &c. ; but this was only a conjecture, to which too much weight must not be attached.

Mr. Betts, in reply, said he was much obliged to Mr. Underwood for his corroboration. The rodents were in several respects a very interesting group, and still offered several unsolved problems to be worked out. In the case of many other peculiarly formed animals, or apparently isolated groups of animals, their relations could be traced through others which were now extinct; but even this clue failed in the case of the rodents for, so far as was at present known, they did not appear until a comparatively recent geological period, and the fossil specimens appeared to be very much like those now existing.

The President said he had very great pleasure in conveying the thanks of the Society to Mr. Betts for his paper. It was one of considerable scientific value; and although papers on so-called practical subjects which could be more generally discussed were no doubt popular, still such a one as this helped to raise the status of the Society and its Transactions in the eyes of the scientific world, and he hoped that the results of other investigations of this sort would continue to be brought before the Society from time to time. He had also to express the thanks of the Society to the various donors of specimens, and to the readers of Casual Communications that evening.

The next meeting of the Society would take place on Monday, June 9th, as the first Monday in June happened to be Whit-Monday, a Bank Holiday, which would be a very inconvenient day for many of the members, especially for those who came from a distance.

The Society then adjourned.

DENTAL HOSPITAL SCHOOL.

Distribution of Prizes.

The Annual Distribution of Prizes to the successful students at this School took place at the Hospital, Leicester Square, at five o'clock, on the 17th ult. In the absence, through illness, of Mr. Alfred Coleman, who was to preside, Sir Edwin Saunders occupied the chair.

The proceedings began by the Dean, Mr. Morton Smale, reading the following Report:—

Before making my report, I am sorry to have to announce that Mr. Coleman, who should have presided on this occasion is seriously ill, and quite unable to be present with us to-day. His absence is much to be regretted, as it was to have been his final public appearance before leaving the country, and would have given him an occasion to wish us good-bye, and us an opportunity of wishing him a long continuance of health in the land of his adoption.

At the last moment, then, we were without a President, and with the kindness that at all times characterises him, Sir Edwin Saunders consented to fill the breach at the shortest notice, for it was only on Monday I heard of Mr. Coleman's illness. We are already indebted to our Chairman for our present increased accommodation, it being entirely due to his generosity that we have now ample room for the requirements of the Hospital, students and patients—the two latter being very important factors in the welfare of our School.

The number of entries during the year has been about the same as last year ; that there has been no large increase may, I think, be accounted for by the formation of Provincial Schools ; but with our increased accommodation and facilities for teaching, this School must stand pre-eminent as the teaching body for the British Dental Student.

Several important changes have taken place on the Staff since last July. Mr. Alfred Hill, who for 25 years had faithfully, energetically, and with such self-sacrifice, performed the duties, first of Assistant, and later as Dental Surgeon, has resigned. Mr. Frederick Canton has been selected to fill the vacancy. Mr. Canton had for some years benefitted the Hospital by his constant attention, skill and professional reputation in the position of Assistant Dental Surgeon. The vacancy thus caused has been filled by the election of Mr. Laurence Read, who served the Hospital as an excellent House Surgeon in 1877 and 1878.

Mr. Charles Tomes has resigned his lectureship on Dental Anatomy. This is a very great and irreparable loss ; he is pre-eminently THE MAN for the position, and both Staff and student regret his retirement.

Mr. Arthur Underwood has been chosen as his successor. Mr. Underwood has distinguished himself in the Dental world by original work, and will be a valuable addition to the teaching staff.

Mr. Ken Underwood, who for eight years had filled the position of Dean of the School, to the great satisfaction of all who came into communication with him, and who, by his genial and kindly manners and excellent administrative abilities, had gained the affection of all the students past and present, has resigned to take holy orders ; we all, I am sure, wish he may very shortly become Dean of another Chapter.

The Medical Tutor was chosen as his successor. This caused a vacancy for a Medical Tutor, to which post Mr. W. B. Paterson has been elected; he distinguished himself as a student here and at Bartholomew's, and since his election he has successfully passed the final examination for the F.R.C.S.

Mr. Pillin has, aided by Mr. Buckland and Mr. Trott, ably filled the office of House Surgeons (they have all resigned), and deserve our best thanks for the efficient way in which they have done the work. Mr. Buckland has been promoted to the Senior House Surgeoncy, while Mr. King and Mr. Bardet have respectively been chosen Assistant and Deputy Assistant.

Our pass list during the year has been good at the recent examination at the R.C.S.; only one of our men was rejected, and he, I am told, was nearly successful. Two have passed the primary examination for the M.R.C.S. This points not only to the excellent teaching of the staff lecturers, demonstrators and tutor, but also to the general *morale* and high tone found amongst our students; and it is my pleasure to bear testimony to the good work done by, and the excellent behaviour of, our present men.

The Saunders Scholarship has been won by Mr. Ackland, and well-earned; he has three first prizes—the Ash prize, and he ran Mr. Trott very closely for the Buchanan prize. He did not compete for the operating prize; during the year he has also passed his primary examination for the M.R.C.S.

The Lecturers, who will introduce their various prizemen to our President, will no doubt, call attention to the fact that Mr. England has done very well, and specially deserves mention.

Mr. George Buchanan, who for some years has given a prize for the best essay on a dental subject, discontinues it. If, in its place, an Entrance Scholarship, either in Science or Arts, could be founded, the Hospital would benefit; but it should be endowed, and not be in the power of the donor or donors to withdraw it.

In conclusion, I would thank, in the name of my colleagues, all who, by their presence here to-day, are giving us encouragement. The ladies who are honouring us we specially thank, for it is at times of victory and prize winnings that their praise and tribute to our successes is more than usually welcome, and stimulates the victor to fresh deeds of valour, and encourages those who have not been successful to new efforts.

PRIZES AND CERTIFICATES OF HONOUR.—The Saunders Scholarship, Mr. W. R. Ackland; the Buchanan Prize, Mr. G. W. Trott; the Ash Prize, Mr. W. R. Ackland.

Winter Session, 1883.84.—Mechanical Dentistry, 1st Prize, Mr. W. R. Acklard; 2nd Prize, Mr. W. J. England; Certificate of Honour, Mr. G. W. Trott.

Summer Session, 1884.—Dental Surgery and Pathology, 1st Prize, Mr. W. R. Ackland; 2nd Prize, Mr. F. S. Peall. Certificates of Honour, Messrs. W. J. England, J. Mansbridge, R. May, T. H. G. Wrighton. Dental Anatomy and Physiology, 1st Prize, Mr. W. R. Ackland and Mr. W. J. England; 2nd Prize, Mr. L. E. Sexton. Certificates of Honour, Messrs. F. S. Peall, G. O. Richards. Operative Dental Surgery, 1st Prize, Mr. Bardet; Certificates of Honour, J. C. V. Crocker, G. W. Trott.

Sir Edwin Saunders said—

Ladies and Gentlemen,—Before I address myself to the subjects with which we are more immediately concerned on this occasion, I feel that it is due to you to offer some explanation, if not apology, for my presence here to-day. You came here in the full expectation of seeing our highly-esteemed friend and colleague, Mr. Alfred Coleman, whom to see, and to listen to whose utterances is not only a moral benefit of no ordinary kind, but an intellectual treat of a high order. And we all cherished this hope and revelled in this anticipation till Monday evening, when we were shocked to hear that the state of of his health was such as to forbid the fulfilment of his promise to preside on this occasion. For, in addition to the pleasure which his friends and former pupils would have experienced in listening to his wise counsel and judicious hints for guidance in professional life there was the deeply affecting, if somewhat mournful, interest arising from its being his farewell appearance amongst us—at least for a considerable time previous to his departure for a brighter and more genial clime. Under these circumstances the Dean in his commendable anxiety, which, like his predecessors, he always evinces in the interests of the School connected with the Dental Hospital of London, bearing in mind the shortness of the time at his disposal, resolved, after a short consultation with such members of the Medical Committee as were at hand, to secure a substitute at once and on the spot. And thus, while "holding sweet converse" with some old friends, and enjoying the refined and elegant hospitality provided by the students at their conversazione on that fateful Monday evening, I found myself oppressed with the responsibility of acting as substitute on this occasion. Then I feel myself somewhat in the position of in what in theatrical circles would be called an "under-study," except that I have neither had the requisite time for the study nor the advantage of seeing the creator of the part. Under parallel circumstances with a great tenor or prima donna the manager adroitly stifles complaint or the expression of disappointment by offering to return the money to all who may demand it, but as that is impracticable in the present case I must throw myself upon your indulgence, and beg you to be content, under these adverse conditions, with good intentions.

Before abandoning all hope I telegraphed to Mrs. Coleman on Tuesday, telling her that I had been asked to undertake the duty, and asking if it were not possible that her husband might yet be able to come amongst us, to which she replied.

Since then I have received a letter from Mr. Coleman himself, which, though I have not his express permission to read, I do not think it would be proper to withhold, feeling sure that his friends here present would prefer to hear his own very words, rather than any summary which it would be in my power to give.

Holly Lodge, Streatham, S.W.
July 16th, 1884.

Dear Sir Edwin Saunders,—I feel deeply grateful to you for having with your usual obligingness, and at so short a notice, saved the staff of our Hospital from a dilemma into which, otherwise, I might have unavoidably placed them.

By your kindly taking the Chair to-morrow, I am relieved from anxiety respecting any one who might feel disappointment at my absence, knowing they will be more than compensated by being presided over by one who proved himself such an unbounded benefactor to our Hospital and School. That it is a sad disappointment to me not to be able to fulfil the honour proposed for me by my late colleagues, I need hardly state, and one I should never have given up had I not been warned that it would be highly dangerous for me to attempt it.

I had looked forward with pleasure to meeting them again, together with my old pupils and many staunch friends of the Hospital and School. I should have liked to have acknowledged to the first-named—my colleagues—how much I have appreciated their uniform kindness and forbearance towards me, resulting in a mutual confidence, esteem and friendship which, during some twenty years has never once been broken or suspended.

I anticipated the pleasure of expressing to my late pupils, in the ear of the public, that which I had told them, and without compliment, in private; viz., that I had never in the course of my experience lectured to so attentive and intelligent a class, and of which no better evidence could be afforded than in the excellence of the prize papers I have had to look over and assess.

My past course of lectures was delivered under difficulties to both Lecturer and Students, owing to the state of health of the former, causing a weakness of voice and at times great difficulty in expression from fatigue, but with a delicacy of feeling—not often regarded as an attribute of the medical student—and of which I shall ever retain a grateful remembrance, my difficulties were so reduced that at the end I found it was the pleasantest and by no means the least profitable course of Lectures, I had ever delivered. And lastly, to the forementioned as also the kind friends of our Hospital and School and mine also—I should indeed have liked to have wished a really "affectionate farewell" and a "God speed to the Dental Hospital and its Medical School."

I remain, dear Sir E. Saunders,
Yours sincerely,
To Sir Edwin Saunders. ALFRED COLEMAN.

P.S.—May I ask that you will do me the great favour of expressing at to-morrow's meeting, on my behalf, the above sentiments.

As you have heard from the Report of the Dean, a report which must have struck us all as exceedingly satisfactory, the efficiency of the School has been fully maintained during the past year, both as regards the number of Students and the amount as well as quality of the work done. Indeed it would be mere affectation or I might say insincerity, not to claim for the London School of Dental Surgery a foremost, if not the first place as an educational institution. In its present improved state with the increased space afforded by recent additions, and with the unique advantage of an open space and unimpeded light it would not be too much to say that it is without a rival. In saying this, however, we do not claim for it that it is altogether and in every respect all that could be desired, but that it combines in a rare degree all the essential requisites demanded by the very important branch of surgery which it is designed and adapted to undertake. It is quite obvious that the lecture room, in which we are now assembled, leaves much to be desired, both in size and form, to say nothing of ventilation, in which, however, it is not singular in its shortcomings. Nor are we blind to its want of symmetry and proportion and its generally unsatisfactory character, either from the æsthetic or acoustical point of view. But the possession of those prime essentials of light and air, those fundamental conditions, so rarely met with in this over-populated and over-built metropolis, but so vitally necessary in the teaching and in the operations of dental surgery goes far to compensate for some amount of discomfort or inconvenience. We could also greatly desire more space for the museum, which is already over-crowded, and is continually receiving valuable additions, which it is most important should be made accessible to the students and others interested in human and comparative Odontology. So complete, however, was the transformation effected by the taste and ingenuity of the gentlemen entrusted with the arrangements in connexion with the Conversazione of Monday last, given by the students, and so thorough was the grasp which they had of the capabilities of the building for such a purpose, that it may well be doubted if these inconveniences were apparent to those who were fortunate enough to be present. Nothing could be more gratifying to those who have for years laboured incessantly and ungrudingly for this great result than the evident pride and euthusiasm shown for their alma mater by the students on that occasion.

The history, during the past years of the Dental Hospital and School, has not been uneventful, though it has not been marked by any great changes or startling surprises. It is inevitable that with the lapse of time and the growing fame of our professors, we should lose the invaluable services of some who by their character and attainments have shed lustre on our institution ; but far from repining at our loss, we must feel thankful that we have had those brilliant services so long ; and indulge a confident and cheerful hope that their successors will maintain the high standard to which they are called. It has been said "Happy is the nation that has no history," and inasmuch as the history-making epochs of nations are usually of a restless and tumultuous character, arising from domestic misrule and disloyalty, or from foreign aggression and complications, exacting in either case a large tribute of blood and treasure and involving much private misery ; the peaceful periods of comparative inaction, barren of honour and public spirit though they may be, may well be reckoned halcyon days.

The great feature of the year, as far as our own institution is concerned, has been a much-needed enlargement of the building, which has added at once dignity to its appearance as regards the external structure, and the means of giving greater facilities for the good work of healing and teaching carried on within its walls. The addition of the Tower house at the eastern end of the original building has improved many of the larger rooms, besides adding rooms of which the want came to be more and more distinctly felt. And it would be difficult, if it were necessary, which it is not, to apportion the relative value of this addition to the two institutions respectively. Though the two are rather parts of one institution, the hospital being absolutely dependent on the staff for any surgical value it may have for the public, and *vice versa*, the staff being utterly powerless to maintain the School in a state of efficiency deprived of the unrivalled field of operation afforded by the hospital. So that their interests are indissolubly bound up and must rise or fall together. And in this instance a dual control is an arrangement not to be deprecated. And here I should state, for the information of those who are not familiar with the working of our institution that we are under two distinct Committees, one of which, the Medical Committee, takes charge of all matters connected with the educational department, while the other, the General Committee, has confided to its care the administration of the hospital. And, if at any time, the relations of the two Committees should seem to threaten to become somewhat strained, it is seen to be only the effect of a passing breeze, ruffling for a moment the surface, perhaps preventing stagnation, and sure to subside under the favouring breath of a mutual desire for the common good. Another circumstance by which the past year has been signalised is the acquisition of the freehold, of which, thanks to the energy of our secretary, Mr. Pink, aided by other good friends of the institution, nearly one half of the purchase money has been already paid. And now with respect to the proceedings of this day gratifying as they must have been to the recipients of the prizes, and especially to him who carries off the prize which bears my name (for he also carries off no less than three first prizes in addition) the pleasure with which the awards have been received must have been enhanced by the hearty burst of sympathy which greeted the announcement. Nothing is more admirable in competition of this kind than that thoroughly English trait of love of fair play and ungrudging and hearty recognition of merit in others. Having persuaded himself of the absolute justice and fairness of the award, he the English competitor honestly and heartily acquieses in it, and far from feeling resentful or discouraged, he applies himself diligently and assiduously to recover lost ground, having a modest but well grounded belief in himself and perhaps taking to his heart the Italian proverb by way of present consolation "Chi va piano, va lontano," confident that he will come out well in the end.

And now we may not separate without indulging in an expression of our deep sympathy and hearty good wishes for him who should have addressed you this day. To part from one who has been for so many years a valuable and conspicuous member of our profession who has done so much and such good work both in and out of its pale, who has successfully filled the most honourable office of Lecturer and Examiner, and whose demeanour and attainments have done much to advance the status of Dental Surgery in this country, to part from such an one is to each a private sorrow. But in all circumstances, however painful, there are if we seek for them, compensating and mitigating considerations, and if, as he believes, and as we hope, his transplantation to a more equable and genial climate, shall increase his power of work and of enjoying life, we must lose sight of our own loss and rejoice in the prospect of increased happiness to himself and to those near and dear to him. If good wishes and ardent aspirations for renewed health and happiness could fill his sails he would have indeed a prosperous voyage. And though separated by a hemisphere, we will hope soon to hear of the arrival at the antipodes of

"A gallant bark from Albion's coast
(The storms all weathered and the ocean cross'd)
Shoots into port at some well haven'd isle
Where spices breathe and brighter seasons smile
There sits quiescent on the floods that show
Her beauteous form reflected clear below
While airs impregnated with incense, play
Around her, fanning light her streamers gay."

BRITISH DENTAL ASSOCIATION.

Annual Meeting of the Western Branch.

The Sixth Annual Meeting of the Western Branch of the British Dental Association was held at the Bath Saloon, Torquay, on Saturday, 2nd inst. Mr. W. A. Hunt, L.R.C.P., M.R.C.S., of Yeovil, the president-elect, took the chair in the absence of the president, Mr. Chas. Gaine, M.R.C.S. There were also present Messrs. J. Smith-Turner, R. P. Morrison, Barnstaple; G. McAdam, Hereford; A. Smith, Clifton; J. T. Browne-Mason, Exeter; B. Mason, Exeter (Hon. Sec.); F. H. Balkwill, Plymouth; Elias J. Keys, Plymouth; J. Collins Tippett, Torquay; J. Rogers Bate, Tiverton; J. H. Whittell, Torquay; A. B. Verrier, Weymouth; W. V. Moore, Plymouth; T. G. T. Garland, Exeter; F. Youngman, Torquay; H. Mallett, Exeter; W. Helyar, Bristol; H. Hellyar, Haverfordwest; John Marks, Newton Abbot; Adrian Parsons, Torquay; Pearman, Torquay; and F. H. Briggs, Torquay.

Next Year's Meeting and Officers.—Hereford was selected as next year's place of meeting, with Mr. McAdam as president. Messrs. Appleby (of Stroud), Verrier (of Weymouth), and Washbourne (of Taunton, were recommended to fill vacancies on the council, and these gentlemen were elected unanimously.

The report of the Treasurer, Mr. Browne-Mason (of Exeter), showed that with a balance in hand of £29, the total receipts were £48, and the Balance remaining after meeting liabilities was £12 3s. 5d.

A vote of thanks was passed to the Torquay Natural History Society for permission to visit their museum.

Papers.—"The Condition of the Tonsils Affecting the

Teeth."—Mr. W. V. Moore, L.D.S. (of Plymouth), read a paper on this subject. The condition of the mouth and other parts of the oral cavity was esteemed by all dentists a very important study in the practice of dental surgery. He specified some cases which he considered sufficient to show that the unhealthy condition of the tonsils promotes caries in the teeth, and also pain and inflamation of the gums and surrounding parts.—Mr. Smith-Turner questioned the theory of the paper. The further, he said, children were removed from fresh air and lacked good food the more they were subject to affections of the tonsils. But he saw no necessary correspondence between that and the teeth, and he strongly deprecated dentists travelling beyond their line of practice. (Applause.)—The President said, speaking as a physician and surgeon, as well as a dentist, he fully endorsed what Mr. Smith-Turner had said.—Mr. Moore, in reply, said Mr. Smith-Turner's remarks were very reasonable, but he did not put forward his case for the dentist's general treatment, but merely as illustrating his theory.

"A Case of Transplantation."—Mr. Balkwill said some little time ago he had to remove in the mouth of a young lady the first bicuspid on the right to make room for the canine, and as her sister wanted a bicuspid in the place of one decayed he took the tooth of the one and put it in for the other. He pressed it firmly in with his finger and held it for about five minutes and afterwards told her to keep her teeth tight down and be careful in eating. That tooth was now almost as tight as any other and was looking as healthy and satisfactory as it could do. (Applause.)—Mr. Keys said he should fear an abscess or a chronic gumboil in such a case; but the President did not see why that should be the case provided the tooth was a healthy one.

The afternoon was devoted to illustrations. A visit was paid to the rooms of Messrs. Pearman and Youngman, Torquay, where a patient had a front tooth pivoted in the manner used by the celebrated Mr. Sheffield, of Torquay. Afterwards at the Bath Saloon, Mr. Verrier gave a demonstration of continuous gum work, Mr. Browne Mason exhibited an electric battery for working the mallet, and Mr. Briggs showed Dr. Campbell's new mode vulcaniser and celluloid apparatus.

"A Method of Protecting Pivot Holes in Plaster Models." —This method was explained and illustrated by Mr. Keys.

The members dined together at the Imperial Hotel in the evening.

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THE MAINTENANCE OF HEALTH AMONGST THE PRACTITIONERS OF DENTAL SURGERY.*

By Oakley Coles.

The maintenance of health, as part of the title of this paper, implies an extra liability to disease, and it may perhaps be well that I should at once make out a case of increased liability to disease amongst the practitioners of dental surgery.

Let me then start with the assertion that the practice of dental surgery, as carried on by the successful and fully occupied practitioner, is injurious to health for these reasons:

(1.) He works, as a rule, in one room, in which the atmosphere is but imperfectly changed and renewed during the day.

(2.) He works in a constrained position, in which some of the muscles became tired from undue use, and others cramped from insufficient use.

(3.) He is subject to the risk of having to breathe, sometimes for more than an hour at a time, air that is diluted with the expired air of a patient who may be in robust health or the subject of chronic or acute disease.

(4.) He is under the necessity in most cases of causing discomfort, and in many cases of giving positive pain, and under both conditions he is expected (and the expectation is usually satisfied) to be thoroughly in sympathy with the patient. This sort of sympathetic feeling, kept up for seven hours—that is, from 10 till 5—seems to me rather more exhausting than even Mr. Cumberland's thought-reading.

(5.) The dental surgeon is, further, limited in his operations to a very small area of vision for work: the adjustment of the sight must be perfect, the look must be intense; the light may or may not be perfect, and he may, beyond the accident of bad light, have to wear glasses to compensate for prematurely worn out adjustment, and use a mirror to see into a cavity on the distal surface of a tooth.

(6.) The accident of temper (good or bad), whether his own or anybody else's, is a factor that must be taken into account, though it cannot be reckoned with.

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* A paper read before the Odontological Society of Great Britain.

Moderately as I have stated my case, I believe it to be sufficiently strong to prove my first proposition, that the successful practice of dental surgery is injurious to health. It will be noticed that I emphasize "successful practice," and for this reason, that a man whose time is not fully occupied is not subject to the conditions I have referred to; neither is a man who never puts in a large gold-filling, or carries out any other elaborate operation, though to all of us the rule will apply in a greater or less degree.

Let it then be granted that the maintenance of health is worthy of more consideration than we have perhaps given to the subject, what can we do?

(1.) Have an operating room as large and lofty as we can get it, so that its cubic atmospheric capacity may be considerably above the average.

(2.) Have the floor covered with parquet work and the walls sized and varnished, so that they may not retain the fumes of any drug used during the day, or form a surface of attachment for the dust that is raised by traffic over the boards.

(3.) Have a Tobin's ventilator, opening near the operating chair, so that there may be a constant change of air in the neighbourhood of the patient and operator.

(4.) Keep a fire alight as long as there is any possible excuse for it, and when that cannot be done have a small gas jet in the stove of sufficient strength to produce an up current in the chimney, and so keep a valve ventilator in the chimney breast in good working order to carry away the warm air of the room.

(5.) If possible, use only one window for the purposes of operating—that is, if you have more than one in the room—shutting out the light from the second window by a dark blue blind. Experience will show that it is easier to work under these conditions.

(6.) Have the window opening low if it be clear of buildings in front, or, failing this, have reflectors to throw up the light on the upper jaw. When it is possible, a top and front light combined is better than a mere front light.

(7.) Let the glazing be of thick plate glass, to avoid the convection currents that produce the draught from thin sheet or crown glass.

(8.) The light may be further increased by side mirrors fixed on "the splay" on either side of the shutter boxes. These should be carefully arranged so that the angle of reflection may be of service for increasing the light in the patient's mouth.

(9.) The operating chair should be of a form that enables the practitioner to do his work with the least fatigue—what form that may be is more than I would pretend to say.

(10.) I will only lay down two rules: it should not be so low as to compel the operator to stand directly over the patient, and so increase his liability to take the patient's breath; and it should not be so high as to require the arms to be raised above the shoulders, and thereby injure the heart by compelling a greater muscular effort to send blood to the brain.

(11.) Those who can operate sitting down will find great comfort from the use of an ordinary music stool, or a sportman's portable seat, or a Lyons adjustable seat.

(12.) In standing it is often a great relief to rest one foot on a stool for a few minutes, and some American operating chairs have, I find, recently been made with this addition at the back of the chair.

(13.) With regard to spittoons, they should be of glazed earthenware, and be so adjusted that a fresh one may be brought into the room for each patient; the old-fashioned pedestal, or tube spittoons, have always been in my experience a source of trouble, from the difficulty in keeping them free from smell.

(14) As to the arrangement of cabinets, instruments, and brackets, and lighting by gas, every one must please himself, and it is scarcely likely that any two people will agree, either as to what they want or how to get it.

(15.) There is only one point to be considered: avoid, if possible, an arrangement that compels you to be constantly turning round, or half round, to get at your cabinet or bracket. It produces giddiness and upsets your sight.

(16.) As to food it is impossible to formulate anything that is likely to be available in any considerable number of cases. I think there should be a rest in the middle of the day for luncheon, though I have known some men work without such a midday meal for years, whilst I have heard that others have been fed whilst operating by some fairylike handmaiden carrying food in the hollow of a silver spoon to the lips of the too much occupied practitioner.

(17.) There are two suggestions as to dress that may be conveniently made here: one is to wear woollen socks an thick-soled boots, and thereby save the extreme sense of fatigue that is otherwise often felt in the feet and ankles; and the next point is to wear either a broad belt or flannel bandage round the loins, so as to preserve the body from chill when in leaning over in a constrained position the vest is displaced and the waist left with insufficient covering.

(18.) My last suggestion refers to the hours that we should devote to work in the operating room. These I would put at from half-past nine in the morning till three in the afternoon, allowing out of that time half-an hour for luncheon, and doing this only for eleven months out of the twelve.

I have thus far been dogmatic in my statements in order to provoke discussion, and perhaps contradiction; for on the subject that we have before us we may hope to gain more from the experience of the many than the observations of any single individual.

May I now be allowed to draw attention in a less precise form to some of the aspects of our professional life, in so far as they affect the maintenance of health?

(To be continued.)

DISEASES OF THE TEETH IN RELATION TO SO-CALLED REFLEX MALADIES.

By Dudley W. Buxton, M.D., B.S., M.R.C.P.. Assistant to the Professor of Medicine, University College, London.

Long ago, old Dr. Watts, in his delightfully chatty volume, "A Treatise on Logick," set forth how half the discord in the world arises from different persons taking opposed views about the meaning of one word. It was the fate of the old woman who told her pastor that she derived vast comfort from that blessed word "Mesopotamia," to exemplify the truth of Dr. Watts' sagacious apophthem, and I fancy we most of us do the same service to our Logician!

Definitions are usually clear only to him who makes them. This being so I shall try rather to explain the meaning of the title of these papers, than to involve myself among the dizzy heights of definition. To our cost we most of us are keenly alive to what is meant by the phrase diseases of the teeth. It will be for us hereafter to ask the dentists and pathologists where structural disease is seated. It will be our business to try and learn whether the gross lesions of the tooth itself, constitute the disease, we must know whether they are but the local manifestations of the disease: if local, do they initiate from systemic trouble, or do they promote such systemic trouble. These are some of many questions the physician has in his mind and the which he seeks to have solved by the experience of the scientific dentist, the man who sees and knows while his hands deftly ply their manipulations.

And thus we get some idea of what one means by reflex maladies in this connection. The many ills which we inherit, grouped under the class reflex, admit of no precise explanation and belong to no definite pathological chapter. We find an organ affected and concurrently meet with some remote corner of the human frame likewise the seat of morbid developments. Mere coincidence is suggested, but when similar associations recur, mere coincidence ceases to become a valid explanation. We become forced to regard the factor of the coincidence as accessories to the act. And yet we fail to see why such and such a lesion should become associated with such another lesion. In many cases anatomy steps in and tells us that the nerve supply of the two regions under question, are more or less closely associated. Here, however, we are not much wiser, we may know the pathway by which the nervous influence travels but not one whit are we the wiser about the nature of that nervous force.

These maladies lie upon the border land of medicine. It so happens that it is well nigh impossible to reduce them to principles, we may study the individual cases but we cannot group them. There is a want of some theory which should be specious enough to cover the bizarre array of their symptoms and hence they do not find their way into the manuals. Medicine holds herself aloof, Dental Medicine is too timid to offer such aberrant ailments a place in her domain. Hence, excluded from alike general and special treatises they find no abiding place in the current literature and are lost or entombed in the catacombs of some society's transactions.

It is always dangerous to live upon a border line, you are neglected or worse still, become the object of interest and bone of contention betwixt two opposing factions. At any rate you lose individuality and become annexed by the stronger.

It has been many times deplored how little physicians know about teeth and their ailments. The ignorance is explained easily enough. Medical students do not attend lectures on Dental Pathology, and further, nobody troubles himself to lecture about borderland topics. We must all of us remember that in the days of lectures one was hopelessly bewildered by one lecturer courteously refraining from touching a border topic while the lecturer on the other border showed an equal degree of delicacy and referred us back to the lectures of his reticent colleague. The lectorial stools allowed us to fall to the ground.

We may now, then explain that we are about to deal with the complaints which seem, and the word 'seem' is used advisedly, to be caused by a reflex irritation which commences in a tooth structure and is conveyed through either a dental nerve or at least a nerve in physiological relation with a dental nerve. The other view of the question involves a consideration of organic diseases which seem to initiate or provoke dental disease. This last aspeet of the question before us has additional interest lent to it by recent advances in the science of preventive medicine.

We meet with whole nations who lament with just vehemence that generation after generation evince, unmistakable signs of retrograde dentition. We learn nothing by being told that "bad teeth run in families," and we have yet to seek the why and wherefore.

We may now attempt an enumeration of some of the maladies imputed rightly or wrongly to tooth irritation.

Inprimis with first dentition we are overwhelmed with the legion of ills the teething human atomy possesses. His gums we are led to suppose form a very labyrinth of mines, springable at the slightest provocation. Red gum, a malady so interesting to every monthly nurse of the old school commences the list, while basal meningitis closes this terrible impeachment of nature on the count that she ever supplied such painful possessions to the infant as its teeth prove themselves. Nature, however, has her defenders as well as her detractors. As we hope to show the bulk of those ailments loosely ascribed to "teething" are in fact the result of quite other morbid processes.

Passing to the second dentition we pause first before that wide range of reflex phenomena which occur in the eye and eye structures in answer to dental irritation; these have only recently been most ably brought before the world and explained by Mr. Henry Power in his historial paper read before the Odontological Society of Great Britain. Reflex phenomena affecting the ear secondarily to the teeth have been little exemplified and little explained.

To the sense of smell also but little attention has been paid in this connection, although as we shall see anosmia and vicious smell hallucination do occur as a result of tooth irritation.

When we pass to the gastro-intestinal tract, we at once open a field which although certainly not barren in facts, yet is one presenting a vast degree of difficulty. It is here that the tact and experience of the diagnostician is taxed. We have salivation with its attendant troubles. We have various affections of the tongue and pharynx.

The stomach and intestines show themselves to be most profoundiy under the influence of buccal irritation ensuing from bad teeth.

We have yet to consider the nervous, and glandular systems but for our present purpose our enumeration is full enough, and we will proceed to consider the cases under the categories sketched above, while for the moment we omit detailed notice of the results of dental disease as as shown in perversions and real-adjustments of the nervous system.

(To be continued.)

CLINICAL STUDIES ON THE COMPLICATIONS OF DENTITION.

By Dr. Magitot.

(Continued from page 743.)

These disturbances are in fact purely of the mucous membrane, that is to say, they consist of certain gingival complications, of which we formulate the pathogenesis in the following manner :—

At the moment that this tooth forces its passage through the mucous membrane, which at this juncture is still represented by the large swelling of the first period, several fragments in process of absorption remain in contact with the grinding portion of the molars and undergo in the manœuvres of mastication repeated contusions and grinding on the part of the opposite tooth. This mechanism is one which does not occur elsewhere. The condition that the two molars come thus in contact with one another, implies two circumstances, the simultaneous cutting of two teeth and the presence between them of a portion of the gum. Thus one finds oneself in the presence of a true local gingivitis sometimes simple, sometimes phlegmonous, occasionally ulcerous in certain debilitated and cachectic subjects.

Simple gingivitis manifests itself by an injection and redness of the part from which inflammation is frequently propagated, to the neighbouring region and extends sometimes to the entire alveolar process. The inaction in which the corresponding side is immediately plunged has for another result the production of these deposits of mucous, of whitish crusts and of masses of tartar which keep up in their turn the gingival conjestion. The treatment is very simple and consists essentially in the pure and simple excision of the fragments of gum, ablation of all foreign bodies and the administration of some gargle of chlorate of potash. We will not dwell upon, nor trace out the history of gingivitis here, it having been done elsewhere. If the inflammatory form terminates in a purulent collection, in an abscess, we treat the local condition in the first instance by appropriate means and after the acute stage is over, by the same indispensible incision. For the most part, gingivitis everywhere takes the ulcerous form, and a great many of the attacks of ulcero-membranous stomatitis of young children have no other origin. The previous state of the patients is certainly the immediate cause of this new process. But it is very important not to lose sight of the local point for fear of foundering among experimental therapeutics which confine themselves exclusively to ulcerous complications.

Here the means will be first directed towards the ulcerations themselves which ought to be attacked by caustics whether of the nitrate of silver or chromic acid, but we prohibit altogether as deleterious to teeth so brittle as those of young subjects all acid applications, and more particularly hydrochloric acid now so frequently advised. As soon as the ulcerations are in the process of healing we may have recourse to the same practice as that recommended before—the excision of the portions of gum This is in a few words the ordinary physiology of the complications attending the eruption of the four first permanent molars. We have not, in a long practice, ever observed any others. There are, however, certain phenomena which we may expect to be produced under given circumstances, and first the possible compression of the series of temporary teeth at the moment of the eruption of this molar. This we have never observed, and the reason is very simple; the slow evolution of the new teeth constrains the equivalent elongation of the maxilla, the teeth fall naturally into the place which they have in a measure prepared for themselves, for we know that in virtue of the law of physiological appropriation the follicular evolution in the infant as well as the embryo demands a corresponding development of the jaws.

If then, no compression is exercised upon the temporary teeth, it will be the same on the posterior side ; that is to say, in the direction of the ascending ramus, or the maxillary root. Here, moreover, the place remains free as relatively it always is, for already at the fifth year the follicle of the second molar has commenced its evolution, but the first molar possesses an eruptive force too great to be disturbed in any way by a new follicle so undeveloped. The perturbing influence could more easily act upon the latter if it were not endowed in its turn in the same way as its predecessor, that is to say, to incite the growth of the maxilla to an extent corresponding with its own volume.

With regard to sympathetic or reflex complications, authors, we repeat, do not give any example of such, we have never ourselves been witness of any.

(To be continued.)

CLINICAL LECTURE ON CYSTS OF THE SUPERIOR MAXILLA.

By Professor Verneuil, Paris.

Three kinds of cysts have been described as occurring in the jaw : 1⁰.—*Follicular Cysts* due to the anomalous evolution of a tooth follicle. These may be multiple it is true, but they are easily recognised ; they are regular and rounded in shape, transparent and filled with stringy mucus and often contain a tooth embedded in their walls. 2⁰.—*Multilocular Cysts*, which sometimes occur in enormous numbers, as many as two hundred having been found in one case. They do not originate in the same way as the previous kind, as is shown by the fact that there are not two hundred tooth follicles in any one jaw. 3⁰.—*Cysts* which might be called *epithelial*, and which are found as a rule in the upper jaw in connection with some decayed tooth or fang.

We shall consider more particularly this last variety to-day. These cysts do not form an integral portion of the jaw, they appear to be contiguous to the bone and are found, as a rule, in the canine fossa, but very seldom on a level with the incisor teeth and more rarely still about the molars. They project on the one hand into the cheek and on the other into the alveolo-labial furrow, which they fill more or less completely according to their size. Sometimes a minute orifice may be detected, showing that the tumour is fistulous ; sometimes the fistula is at the bottom of the alveolus, and at others the cyst is closed.

These cysts only spread towards the front, and it is very unusual to find them either encroaching on the floor of the orbit, or extending and projecting towards the nasal fossa on the same side. It is rarer still to find them protruding in the roof of the palate.

They have sometimes been mistaken for affections of the antrum, and especially with dropsical effusions into this cavity when projecting into this region. But in this form of disease of the sinus maxillaris, the dilatation occurs as much towards the nasal fossa as towards the mouth where the tumour drives in the roof of the palate, and towards the orbital cavity, the floor of which may also be displaced.

These cysts are always of a benignant nature, though in a certain number of cases they are exceedingly painful and give rise to attacks of facial neuralgia of a most distressing form. If the tumour be large and the cyst whole, a kind of false fluctuation may be detected in it. The walls feel soft externally. When the cysts are opened they are found to contain a stringy, sometimes muco-purulent fluid, their internal surface is covered with a layer of tesselated epithelium, with a thick membrane which it is absolutely necessary to destroy by peeling or scraping in order to obtain a permanent cure.

Every word M. Magitot has written about these cysts is perfectly correct and the only point on which we differ is one of pathogeny. M. Magitot calls these cysts *periosteal;* he believes that a slight inflammation or even a wound may cause the separation of the alveolar periosteum followed by an exudation of pus or serum. Not finding any means of exit the fluid gradually dilates the cavity in which it is contained. The alveolo-dental periosteum is driven back, the cavity increases in size and the cyst is thus formed, having at its periphery the dilated periosteum and in the centre the end of the denuded fang of the tooth. This is all very clear ; but how can we account for the presence in the interior of the cyst of a thick, mucous membrane covered over with a layer of pavement epithelium, if there be no previous normal anatomical structure for it to start from ?

If you carefully remove a tooth with its root, or a root of a tooth alone, in most cases you will observe at the very end of the fang a small ampulla as soft as a granulation, of a greyish red colour and sometimes already of a polypiform shape, of the size of a millet seed, if not larger. This small ampulla, when cut through the middle, shows in its centre a small cavity lined with stratified epithelium, similar to that found on the internal surface of one of these cysts. I have always found this structure present, and on the other hand, I have carefully examined the plates in M. Magitot's work and I see that he there figures a small organ called the *gubernaculum dentis.* This organ, which may be temporary and may disappear when the tooth is fully formed, just happens to be lined with stratified epithelium. The gubernaculum and all other temporary organs disappear, as you know in a certain number of cases, but in others they may persist during the whole of lifetime ; among these are Rosenmüller's organ, the vas aberrans, etc. They also possess the property of taking on some pathological action and giving rise to special forms of tumours. In this way the gubernaculum dentis forms a small sac, which under the influence possibly of caries in the tooth, may gradually increase in size and end by becoming a cavity into which the point of the root will project. As a practical result we shall find that in order to cure such tumours it will be necessary to remove the primary cause of the disease, either the tooth or fang, and then to lay the cystic cavity widely open and destroy the mucous membrane, and its pavement epithelium lining the cavity, by scraping or peeling it away.

The term, periosteal cyst, is thus incorrect, and should have substituted for it that of cyst developed in an embryonic organ and closely adherent to the jaw.

The racemose disposition of the gubernaculum dentis likewise helps us to explain how we occasionally meet with a more or less considerable number of cysts instead of a single one. Its structure also affords an explanation, as M. Paul Reclus tells us in his work entitled : "Clinical and Critical Surgery," of the fact that the epithelium, lining the internal surface of these walls, may proliferate in the same way as it does in sebaceous glands and give rise to the variety of epithelioma of the upper jaw, now known by the name of cavity or terebrating epithelioma (epithelioma cavitaire ou térébrant), which is of such a very fatal nature when not removed at a very early period.

CLOSURE OF THE JAWS.

Dr. John J. R. Patrick, Belleville, Ill.*

(Continued from page 739.)

On the 14th of February, 1863, M. Deguise brought forward a case in which he had removed a centimeter and a half of bone with the same unsatisfactory results, and he expressed a doubt whether a single case could be produced that was successful. The failure depended upon the formation of an osseous callous at the level of the resected portion

Christopher Heath says : "The treatment of cicatricial contraction within the mouth, by simple division, has been proved over and over again to be worse than useless ; but when suitable apparatus is adapted to the jaws, so as to prevent re-contraction, a very good result may, with patience, be produced in cases uncomplicated with destruction of the cheek. The only drawback to this mode of treatment, and one with regard to which it contrasts unfavourably with Esmarch's proceeding, is the amount of pain which the patient must of necessity undergo during the after treatment. It requires no small amount of courage on the part of the patient, and some determination on the part of the attendant, to carry out the necessary manipulations within the mouth, which only those who have arrived at years of discretion will submit to. The treatment of internal division and the use of metal shields is applied to all cases in which the entire thickness of the cheek is not involved, and can, with due care and attention, be made to yield most satisfactory results. On the other hand, the operation itself is difficult and bloody, and the after treatment is tedious and troublesome, and it is essential for success to have the co-operation of a dental practitioner fully conversant with the frequent modifications which the metal shields must necessarily undergo."

I will now give Mr. Heath's mode of operation by making an abstract of one of his most successful cases.

December 15, 1862.—Patient, a young girl aged eighteen ; closure of the jaws from cicatrices. History: had measles when five years old ; supposed to have taken mercury. In one year from her sickness her jaws were firmly closed. When about seven, an operation was performed; was benefitted for a short time only, and soon her jaws were as firmly closed as before the operation. When about eleven years old she was admitted into the London Hospital, under Dr. Luke, who divided the cicatrices and opened the jaws with a screw. Was in the hospital three months, and was slightly benefitted for a time. Eighteen months after she was again admitted, and the same operation was again repeated, oiled lint being introduced between the cheeks and jaws, and wedges inserted between the teeth; contractions soon recurred, however, and for the last two years the jaws have been firmly closed. Operation by Mr. Heath: The patient under the influence of chloroform, the cheek was dissected from the alveoli and the mouth screwed open. Oiled lint stuffed between the alveoli and the cheek, and the patient put to bed. Opium administered. December 18th.—Oiled lint removed; can open the mouth a little; very painful; lint soaked in myrrh lotion and placed in the cheek. December 20th.—Obtained the assistance of Mr. Clendon, Dental Surgeon to Westminster Hospital. Patient put under chloroform. Mr. Clendon took moulds in gutta-percha for the formation of shields. December 25th.—House Surgeon called up in the night, patient bleeding freely, plugged the cheek with fresh lint, which stopped the hæmorrhage. Second hæmorrhage occurred in the afternoon, coagulum formed, hæmorrhage stopped.

December 26th.—Patient reduced by the bleedings ; clots left undisturbed. Ordered wine and beef tea. December 27th.—Severe arterial hæmorrhage in the morning ; syringed sulcus out with cold water; wine, beef tea and eggs. December 29th.—Patient somewhat anæmic; postponed further interference until recovery from loss of blood. January 5th., 1863.—Patient under the influence of chloroform. Carried finger freely between the cheeks and the alveoli, breaking down the soft adhesions which had begun to form; better moulds taken with gutta percha, from which silver shields were made. January 7th.—Under chloroform; shields fitted to the alveoli, the edges of which passed between the alveolus and cheek; blocks of gutta percha were wedged between them to keep the jaws apart. January 10th.—Under chloroform; fresh shields with deeper sides were inserted. January 14th.—Bone wedges fastened to the shields to keep the jaws apart; lotion of chlorinated soda used. January 21st.—Under chloroform; examination of the mouth made. The sulcus increased in depth. The mouth is kept well open by the bone wedges, and the absence of the incisor teeth gives plenty of room for the introduction of food. Took fresh impression, old shields and bone wedges reinserted. January 28th.—Under chloroform; shields removed and relined with soft gutta-percha; soreness diminishing.

February 4th.—Under chloroform; fresh shields with deeper edges, which kept the mouth widely open. February 12th.—Some little swelling about the right eye the last day or two, subsiding under fomentations. February 18th.—The patient is able to move the jaw to a slight extent with the shields in the mouth.

February 28th.—The shields removed under chloroform, having been in position three weeks. Fresh gutta percha added. The mouth increased in size and the sulci much deeper.

March 11th.—Shields removed under chloroform, blocks cut off, their places being supplied by moveable wedges, so as to permit the patient's removing them when eating, and thus exercise the jaw. Granulations in each cheek touched with nitrate of silver. March 25th.—Under chloroform, the adhesions between the lips and the alveoli divided. Fresh shields made deeper, so as to free the parts from subsequent contractions. On the 2nd day of April, Mr. Heath, after making a thorough examination of the month, dismisses the case with the following observations: "When the mouth is open, the lining membrane of the cheeks can be seen between the shields, and it is already assuming something of the appearance of mucous membrane. The mobility of the lips, and hence, the size of the mouth, has increased considerably since the last operation; and as far as I can see this case promises to be successful."

Dr. Samuel Gross, of Philadelphia, in his large work on surgery, who gives by far the most complete account of these affections of the mouth, says on the subject of closure of the jaws by cicatrization of the mucous membrane : "When the immobility of the jaws depends upon the presence of inodular tissue, the proper remedy is to excise the offending substance, an operation which is both tedious, painful and bloody, and unfortunately, not often followed by any but the most transient relief, owing to the tendency in the parts to reproduce the adhesions, however thoroughly and carefully they may have been removed. There is the same remarkable disposition in these cases to contraction and regeneration of the inodular tissue, as in the cases of burns and scalds."

(To be continued).

THIRTEENTH CONGRESS OF THE GERMAN SURGICAL ASSOCIATION.

By A. Bidder, of Berlin.

(Continued from page 751).

18.—*Reasons for the Re-appearance, in cases of Harelip, of the second Incisor Tooth which is lost in Man.*—The atavistic re-appearance of the true second upper incisor, especially in cases of double cleft palate, is to be accounted for by the fact that under such circumstances, the arteries of the internal intermaxillary bones and vomer do not articulate with those of the external intermaxillary bones and upper jaw. This has a specially beneficial result so far as the nutrition of the vomer and inner intermaxillary bone is concerned, and the result is that tooth follicles which develop but very seldom in the normal jaw do so much more frequently in these cases; the excessive development of the vomer which is so often seen in this form of malformation may also be explained in a similar way ; in some cases the inner intermaxilliary bone attains to such an extraordinary size that it becomes absolutely necessary to resect it. The extreme hardness of the vomer and two inner intermaxillary bones in such cases is also similarly accounted for.

19.—*Embryonic Development of the Jaws.*—The internal intermaxillary bone is developed from the internal nasal process of the frontal process. The external intermaxillary bone from the outer nasal process of the frontal process. The upper jaw from the upper maxillary, the lower jaw from the lower maxillary process.

20.—*Embryonic Causation of Fissure in the Palate.*—In normal development, the inner and outer nasal processes of the frontal process, join below the nasal aperture; but in cases of cleft palate the separation between them persists.

B. FISSURES IN THE LIP:—HARELIP.

21.—*Embryonic Development of the Upper Lip.*—The upper lip is formed from three separate lips on either side, or six on the whole. They consist of the two intermaxillary bone lips, the two outer intermaxillary bone lips and the two upper jaw lips. On either side we have thus an internal interlabium, an external interlabium and a supralabium.

22.—*Relation of the Intermaxillary and Upper Jaw Lips and of the Intermaxillary and Upper Jaw Bones.*—(1.) The inner intermaxillary lip corresponds with the inner intermaxillary bones. (2.) The outer intermaxillary lip with the outer intermaxillary bone. (3.) The upper jaw lip with the inner intermaxillary bone of the upper jaw.

23.—*Embryonic Development of the Intermaxillary and Upper Jaw Lips, and of the Intermaxillary Bones and Upper Jaw.*—(1.) The internal intermaxillary lip and internal intermaxillary bone are both formed by the internal nasal process. (2.) The external intermaxillary lip and external intermaxillary bone are developed from the external nasal process. (3.) The upper jaw lip and upper jaw bone are both derived from the upper maxillary lobe.

24.—*Number of Different Fissures of Upper Lip.*—Three different kinds of fissures are met with in the upper lip. (1.) Fissures between the two internal intermaxillary lips (median fissure of upper lip). (2.) Fissures between the internal and external intermaxillary bones (harelip). (3.) Fissures between the outer intermaxillary lip and the upper jaw lip (coloboma of upper lip). Besides which, we also meet with—(4.) Fissures between the upper jaw lip and the lower lip (macrostomic fissure of the lips).

25.—*Morphological significance of the different Fissures of the Upper Lip.*—(1.) The fissure between the two inner intermaxillary bones represents a separation between the two internal nasal processes. (2.) The fissure between the inner and outer intermaxillary lips means a fissure between the inner and outer nasal processes. (3.) The fissure between the outer intermaxillary and upper jaw lips is a fissure between the external nasal and upper jaw processes.

C. FISSURES OF THE FACE (FISSURES OF CHEEKS).

26.—*Embryonic Origin of Face.*—The cutaneous and soft portions of the face are derived, according to Albrecht's view, from the two upper and lower cheeks; each upper cheek again from an inner intermaxillary, an outer intermaxillary and an upper jaw cheek on either side. The lower cheek would thus correspond to the lower jaw process; the inner intermaxillary cheek to the internal nasal process; the internal intermaxillary cheek to the external nasal process and the upper jaw cheek to the upper maxillary lobe on either side.

27.—*Number and Morphological significance of Fissures of the face.* (1.) There is a form of fissure in the face which divides the ala nasi, from the cutaneous coverings of the bridge of the nose; it is called the nasal fissure and runs between the inner and outer nasal processes. (2.) In another form the fissure runs from the mouth to the orbit without touching the nose, this is called the oblique facial fissure and divides the nasal process from the upper maxillary lobe. (3.) In a third variety the fissure runs from the angle of the mouth to the ear, it is called the macrostomic fissure of the face, and lies between the upper and lower maxillary lobes.

DISCUSSION.

VON LANGENBECK (Wiesbaden), thought that Albrecht's theory of the mode of formation of hare-lip between the inner and outer intermaxillary bones does not meet all cases, for certain well-authenticated examples of wolf's jaw (cleft palate) have been described in which the intermaxillary bone bears four incisor teeth without the occurrence of another incisor tooth in the upper jaw in front of the canine. True cases of median fissure of the face are also occasionally met with. These views were strengthened by the exhibition of a number of drawings.

H. KÖLLIKER (Leipsig) drew attention to the circumstance that Albrecht had brought forward many schematic drawings but no new facts. The three skulls exhibited, two human and one of a horse, in which there could be no doubt that a portion of the intermaxillary bone had been detached from the body of the bone and had become fixed to the upper jaw on the other side of the fissure, were novelties. This observation would, however, not justify the conclusion that this is the rule, it would rather appear to be an exceedingly rare exception. In about fifty cases which the speaker had examined he had never been able to discover any incisor suture on the opposite side of the fissure ; cases like those shown by Albrecht he was disposed to look upon as pathological and would place them in the same class with the bi-partete cuneiform bone and the double molar bone. H. Kölliker further remarked that Albrecht had only described two forms or types of double harelip, those with the four and those with the six teeth ; but there were other possible forms besides these. Cases of double cleft palate have been met with with two, three, five, and seven incisor teeth. Albrecht had also omitted to describe those cases in which the four incisors are situated in the intermaxillary bone, while the canine is the first tooth in the upper jaw on the other side of fissure. Such cases are without the slightest shadow of doubt not *intra incisors* but *incisor* *maxillary fissures.* According to Albrecht's views, however, in such cases the lateral intermaxillary bones are wanting together with the dens pro-canines (lateral incisors), the outer incisor tooth in the intermaxillary bone would therefore have to be looked upon as the third incisor or the dens proparasymphysis. The speaker did not consider Albrecht any more justified in his further conclusion that a normal man has four intermaxillary bones, and that only because in pathological exceptional cases this bone is found divided into four pieces. Kölliker next reminded his hearers of his embryological researches by means of a series of sections, more especially of macerated skulls, which show beyond any possibility of doubt, that the normal embryo only has two intermaxillary bones. He was obliged also to express his dissent from Albrecht's theory, according to which the external nasal process of the frontal takes part in the formation of the soft tissues of the upper lip. This is not the case, and the internal nasal process of the frontal process joins directly with the upper maxillary lobe—that is at least according to both Flis and A. Von Kölliker.*

Kölliker summed up his views as follows: The usual position of the fissure in cleft palate is between the intermaxillary bone and the upper jaw, and the human embryo is possessed of two not four intermaxillary bones.

Albrecht, in his reply, remarked that four intermaxillary bones were found in all vertebrated animals, and it would be very surprising if man alone only had two. The fact that in one of the lowest forms of vertebrata, the ornithorhynchus paradoxus, a double harelip, is found as a normal condition, and always between the inner and outer intermaxillary processes, would appear to him to afford very strong support to his views. He would grant that the ossification of both intermaxillary bones, the inner as well as the outer, may possibly proceed from one centre; but they form nevertheless two portions of the skeleton morphologically perfectly distinct.

Kölliker then demonstrated on an embryo of the seventh week, the two intermaxillary bones which can be seen in the preparation as perfectly separate bones not yet united to the upper jaws.

THE ETIOLOGY OF DENTAL DECAY.†

By Geo. Watt, M.D., Zenia, Ohio.

For many centuries the profession rested in absolute quiet and content, holding that the well known decay of the teeth resulted from inflammatory disease, regarding the term inflammatory in its ordinary acceptation without reaching out for such definitions as "retrograde metamorphosis of tissue,"—definitions, intended to be broad enough to enwrap and hide from view the ignorance of the definer.

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*On the intermaxillary bone of man and the anatomy of harelip and wolf's jaw (cleft palate). Halle: 1882. p. 6.

† A paper read before the Ohio State Dental Society.

As long as the above views were universally held, in reference to the etiology and pathology of dental decay, as indicated by the universal adoption of the term dental caries, no progress was made, or could be made, towards rational and proper treatment of this condition. I have elsewhere said, that the discovery and recognition of the fact that dental caries is something else than an ulcer, laid the foundation of dental surgery. This position was criticised with attempted severity by one who is diligently working to roll back the car of dental progress, and who, by virtue of an accidental position, apparently reached as an advertising dodge, may be able to accomplish something in his favourite direction, if still permitted to spend his strength where true progress has not yet reached its average momentum.

For more than thirty years, as some of you can testify, I have endeavoured to impress on my professional brethren that this is altogether the most important question in dental science; and daily I am pained to see how little progress has been made in the third of a century referred to. So little clear thought is yet manifested, that even to-day, not only with the less educated part of our profession, but often with advanced thinkers, it is not thought necessary, or even important, to recognise varieties in dental decay. Though the three principal varieties are not more alike than a horse, a cow, and a sheep,—not more alike than boils, tetter and chilblains—they are spoken of as identical. Phenomena are referred to as found in a carious tooth without the slightest hint as to which variety of caries is spoken of. And this is as true of men claiming to be eminent in our profession as it is of the tyros.

It is well known that the physical phenomena of dental caries are not greatly varied. But three, or if we include what is sometimes called "chemical abrasion," four distinct varieties are found, and the various modifications and combinations of these will explain all the recognized different appearances.

Many of the phenomena of caries can be observed as well, or better, by the unaided eye as by magnifiers. The black, brown, yellow, orange and white colours illustrate this. And the difference in texture of the different varieties is as observable without glasses as with them. No one can fail to see, in the most common form of decay, a state similar to what is sometimes called gelatinous bone, where, to show the organic structure, the solid portions of the bone are dissolved out by hydrochloric acid. The unaided eye can see that, to a good degree, the solid materials are gone from the softer textures ; and it can recognize a decided difference in the textures of black and white decays,—can see a complete breaking down in the latter, with but little displacement of materials in the other. Yet at the present time quite a number of writers for the periodicals ignore all these differences, even though they talk much of the microscope, learnedly of leptothrix, and abound in bacteria and other bugs and bushes ; and with dogmatic assertion, try to carry us back to the principles held before the dawn of dental surgery—principles which had to be discarded in order that dentistry might spring into existence and take rank as a profession.

Let it not be supposed that I undervalue microscopic research. Far from it. I gave the last dollar I had, to purchase a better microscope than any I know of in the West, and borrowed money to pay my way home, even though I did not expect to have either time or opportunity to use the instrument in prolonged research. But let me remark that far too much confidence is placed in the statements of those who observe with high powers. This is evident from the almost constant contradictions of observers. There is great danger of optical delusions when observing with very high powers ; and the danger increases in proportion to the squares of the powers. Hence the higher the power necessary to make any observation, the more caution is called for in receiving the testimony thus elicited. I am more than delighted to see these researches, but it is desirable to get the good without the evil from them. It is not strange that they receive too much credence. Human faith naturally takes hold on mystery. It is analogous to the weight given to chemical analysis in the popular mind, and which often results in the hanging of innocent men.

The germ theory of decay is lately pressed with considerable zeal. In all articles I have read in this direction, the writers show a very decided lack of clear thought as to what is held by the advocates of the so-called chemical theory. Some of them display absolute ignorance in this direction. But this is not strange, for even some holding to the "acid theory" have almost equally clouded views.

Now and then, through all the years of my connection with the dental profession, some wiseacre gets up to tell us that some constitutions are so defective that the dental organs are not well developed, and therefore decay easily. And even when they are all that ought to be expected from nature, by disease, constitutional or local, the buccal fluids become vitiated and cause the teeth to decay ; and then he tells us that therefore the chemical theory does not explain all, and he announces his discovery of the "chemico-vital theory," and feels that he has lifted the whole profession out of the slough of ignorance.

Of course you all know that the most enthusiastic advocate of the chemical, or acid theory recognizes all these constitutional or local predispositions. but he holds, at the same time, that no tooth is so badly developed that it goes into decay without an exciting agent.

To illustrate what has been termed a lack of clear thought in reference to the chemical theory of decay, it may be necessary to make a few somewhat lengthy quotations. It is hoped the reader or listener will be patient in proportion to the importance of the subject.

In a paper read by Prof. C. W. Spalding, at the Annual Meeting of the Illinois State Dental Society for 1881, he says : "In common, I believe, with many other practitioners, I have supposed that an acid condition of saliva prevails, or at least may usually be looked for in most cases of rapid decay of the teeth."

Now, while all the above is true, it shows great lack of clear thinking in reference to the acid theory of decay, which the Professor seems to countenance mainly in his article. Acids diffused throughout the buccal fluids, and therefore quiescent, can not cause dental caries. If the proper acid, and sufficiently concentrated, it may corrode the teeth, especially if dentine or cementum is exposed. But the acid which excites caries, as Dr. W. A. Pease lately expressed it, is generated, "*de novo*, on the spot."

Professor S. goes on to say : "My first experiments were made upon the saliva of a girl (aged 12), whose teeth were decaying rapidly, so much so that fillings previously inserted, that is before the case came into my hands, whether of gold or other materials, had lasted but a short time, and in whose teeth new cavities were constantly forming, and this at so rapid a rate that cavities of considerable size would form in the space of a few months, notwithstanding pretty thorough cleanliness and good general care. I looked to find an acid reaction of the saliva in this case, and had been reflecting on a course of medical treatment, having in view the correction of the supposed condition of the saliva. What, then, was my surprise, on finding, after repeated tests, that the saliva of this young person exhibited in every test either a neutral or a slightly alkaline chemical reaction ! In no one of a large number of tests was there any, even the smallest acid reaction shown. I immediately sought other cases where a similar destructive process was going on, but the result in each case was precisely the same as in the case just narrated. * * * A professional friend also made similar tests in some very marked cases of rapid decay, with the same results —no acid condition of saliva revealed."

It is unfortunate that Prof. S. and his friend have failed to tell us what variety of decay prevailed in these cases. By making this omission they have almost failed to tell us anything about them ; but it is quite probable the decay was light coloured. It is well known that black decay is the least destructive and the slowest in progress of the several varieties of caries, while the light coloured is the most rapid and disastrous. It is well recognized, too, by the thoughtful, that an alkaline state of the buccal fluids is a usual precursor of white decay. Many of you will bear me witness, that in the college, and in this society and others, I have diligently warned you of the danger of an alkaline reaction of the saliva, and have persistently urged an acid course of constitutional treatment whenever white decay is prevalent, or tartar is abundantly deposited. I have talked about pickles, vinegar, lemonade, saur-kraut, etc., till your ears have tingled with the names. And why ? All well-posted advocates of the "chemical theory of decay believe that the exciting agent—the immediate thing that does the business, without anything between it and the mischief —acts in its nascent state." And the nascent state results from two distinct processes, the effect, that is, the nascent agent's activity, being the same. It may be produced either by synthesis or analysis, as for example, if sulphur is oxidized in the presence of water, sulphuric acid results, and thus resulting, it is nascent. Or a sulphate may be decomposed, the base combining with some other acid, and thus setting the sulphuric acid free, and in this condition it is nascent. You all know that in their nascent state chemical re-agents manifest greatly increased powers.

Because the specific acids, in producing caries, are always nascent, as rapidly as atoms of any of them are formed or liberated, they take hold of the tooth substance, when generated or liberated in contact with it. And this renders it impracticable to find the specific exciting agent in any case of dental caries in an uncombined state. The camel was not seen ; but the Arab knew it had passed his tent by the fresh tracks it had left behind it. The specific acids—the exciting causes of caries—are not seen, but their work and its results are plainly observable. When this doctrine is clearly in the mind, no one will be surprised to find the buccal fluids alkaline in mouths affected with rapid decay. In a majority of such cases the alkalinity is due to ammonia, which is a compound of nitrogen and hydrogen, and which is always formed during the putrefaction of azotized bodies, or whenever the vitality of such tissues is so low that it is not able to resist chemical action. And when ammonia is exposed to the action of oxygen, either nascent or quiescent, its nitrogen is burned or oxidized into nitric acid, and its hydrogen into water. The great affinity of the acid and the water for each other, Liebig calls a disposing circumstance, which he says, increases the tendency to the oxidation. I am not unmindful that the paper I read before you last year was pronounced "partly antiquated," *partly* because it was according to Liebeg ; but a chemical fact in the days of Liebeg is a chemical fact still, in dispite of the opinions of juvenile chemistry. Those who are duly posted on the chemical theory of decay, and are, at the same time, wide awake, whenever they find a decidedly alkaline reaction of the buccal fluids, resort at once to a tonic and acidifying course of treatment, as they know the great danger that white decay is likely to run a rapid career, unless the tendency is arrested. And their antiseptic treatment is not used by them for the destruction of germs, but to get rid of the tendency to the formation of nitric acid.

In the discussion of Prof. Spalding's paper in the Society, Dr. Swain is represented as saying, "Twice during the year I have had in my office a harmlessly insane young lady. In her mouth I have found the saliva uniformly acid, but her teeth do not decay." What acid gave the uniform reaction we are not told ; but it was probably the normal carbonic acid, and it was fortunate for her that ammonia was not found to neutralize it. It is fortunate that such half-way observations and tests tell us so little ; but when we think how busy and how tired the ordinary dentist is, we can not be surprised.

But suppose the saliva, the mixed buccal fluid, is all the time acid, and that the acid or acids it contains are sufficiently concentrated to act on the teeth, nothing like the phenomena of any variety of dental caries can be produced. If the teeth are of uniformly good texture as to their entire external surfaces, these surfaces may be, roughened, or corroded by the acids. Further on I shall endeavour to explain how the phenomena of caries are produced, in accordance with the so-called chemical theory, and I think no one will regard the results as at all mysterious.

(*To be continued.*)

Reflections from the Surgery.

CASE IN PRACTICE.

Under care of Percy May, M.R.C.S., L.D.S.E.

A patient, the widow of a physician, about 55, had complained of pain and deafness of the left ear for about three years, for which she had been treated by several medical men, one of whom at last advised her to consult an aurist. Previous to doing so she came to me on August 11th, complaining of pain in an upper canine. At the same time she mentioned the above circumstances. The Canine tooth in question was extensively decayed and the pulp cavity full of pus, but there was no extensive peridental mischief. As I thought this condition a possible cause of the deafness (no other tooth or stump being on that side) I advised the tooth's removal. I extracted the tooth under gas on the same day as the patient visited me ; upon returning next day she assured me that she had felt no further " pain or fullness in the ear and the deafness was quite cured."

Being such an unusual case, I deem it worthy of record.

A further curious fact connected with this patient is that to both the 1st and 2nd lower right molars there was four distinct roots.

Endsleigh Gardens, N.W,

British Journal of Dental Science.

LONDON, SEPTEMBER 1, 1884.

THE MEDICAL SICKNESS, ANNUITY AND LIFE ASSURANCE SOCIETY.

Not one of the least interesting features of the recent Belfast meeting of the British Medical Association, was the holding of the first meeting of the Medical Sickness Annuity and Life Assurance Society. It presents alike to the medical world and to that branch of it which we represent—the dental section—objects of paramount importance. Surely no apology need be sought for repeating again and again that this society will, if properly managed, bring to dentists a means of absolutely protecting themselves and their families from the possibility of penury or want. That it will be well managed we may be sure when we glance down the list of officers and trustees. Whatever may be the shortcomings of the British Medical Association and the moving spirits who have made it what it is, there is no question of the remarkable organizing power and business capacity which move its wires.

The election of Mr. Gilbert Walker, L.D.S., to act upon the General Committee, besides being gratifying to the profession, offers earnest of careful and thorough work on behalf of the dental profession.

It was wisely done to select from among the practical dentists, one whose long association with the profession has been marked by an absence of party bias or leaning to that cliqueness which is so rife just now, and which, were it successful, must result in swamping the broad interests of the profession at large in order to attain the aggrandisement of a coterie.

With the sagacity and remarkable business capacity of Mr. Ernest Hart as Chairman, the Society started to win—the report of the past few months confirms the happy augury. Still, at present it would be natural that many dentists neither know of the benefits offered by the Society or even are aware of its active existence. It must, therefore, prove beneficial, if, from time to time, means are taken to address the dental section of the Society as a separate body and to bring the matter home to them individually. And this we hope to do. In the interim it is to be hoped that the numerous readers of the *British Journal of Dental Science* will come forward and avail themselves of the opportunity which is now presented to them.

BEST WAY TO STIPPLE A CELLULOID GUM FOR PLAIN TEETH.—MR. FORD, writing in the *Dental Summary*, says:—"My plan is to mount the teeth in the usual way on wax and paraffine, after trimming and carving the wax and paraffine gum into the proper shape and thickness. I then put over it a piece of heavy tin-foil, trimming it around and between the teeth, and with a warm burnisher, I burnish it perfectly smoothe and firm at every point where I want the gum surface stippled. I then take a small piece of No. 0 sand paper, and with a warm burnisher, I burnish the sand paper all over the surface of the tin until the surface is rough, just like the sand paper, or you can make a very small wood mallet and cover the face of it with sand paper, and by light blows you can stipple the tin; I do not leave the sand paper on the surface of the tin, I only use it to produce the same kind of a surface on the tin that is on the paper. This makes a more uniform, grainey or granulated surface like the natural gum, than can be produced with the point of an instrument done in the usual way, and is quicker.

When you melt out your wax and paraffine by pouring hot water over it in the usual way, you will find the inside surface of the tin is stippled just like the outside. Then mould your celluloid against this tin surface, and when you peel the tin off the celluloid you will have the most perfect granulated flesh-like looking gum you ever saw. Dr. John Allen's beautiful continuous gum not excepted."

DEATH DURING THE ADMINISTRATION OF BICHLORIDE OF METHYLENE.—A most lamentable ocurrence has taken place in the family of Dr. J. H. Hammond, a gentleman in large practice and highly respected at Preston, in Lancashire. Dr. Hammond was in town with his wife and daughter; the latter lady, aged twenty-three, had been married about three years to Capt. Jackson, of the North Lancashire Regiment. She had consulted Dr. Aveling for some small uterine trouble, and that gentleman considered it advisable that she should undergo a slight operation. She had considerable dread of this procedure, and having known from early childhood Mr. Barwell, requested him as an intimate friend to be present. Accordingly last Tuesday everything was prepared, and Mr. Fenton Jones proceeded to administer the bichloride of methylene by Junker's method. In less than three minutes, and when only about ten minims of the anæsthetic had been used, the heart suddenly ceased to beat and respiration stopped. All possible means were employed to re-establish breathing and to stimulate the heart, but every effort was unavailing. It is almost superfluous to say that the action of the heart and lungs had previously been ascertained to be normal, or to point out that the presence of four skilful and experienced medical men, one of them the patient's own father, at the time must be taken as a guarantee that every device for the saving of life was employed. It is to be hoped that this consideration may somewhat mitigate the deep regret of her family and of her husband at the early and sudden demise of a most estimable and amiable lady.

This agent, which so many believe to be practically free from danger, has, considering how unfrequently it is employed, a death-rate too high to allow its use to be recommended indiscriminately or without careful examination of the patient before the attempt is made to provoke narcosis.

Another Death from Chloroform is reported under very painful circumstances.—A youth was employed by a chemist and contracted the dangerous habit of giving himself chloroform. This led to several narrow escapes and finally caused him to fall a victim to this reckless practice. Such a practice cannot be too gravely reprobated; we fear, however, it is upon the increase.

Tooth Puller or Dentist?—The following shows what estimation "tooth pullers" are held in across the Atlantic:—"There is one dentist in Missouri, doing country practice, who boasts of extracting one hundred and forty teeth in three days, and at another time five hundred in three weeks. We hope there is not another such butcher, neither in Missouri nor in the whole list of states. This is not dentistry. Taking out teeth or roots that are firm and supplying their places with ghastly, shakey, crockery, is a blot on America's dental escutcheon, that it will be the aim of the archives to eradicate. Throw forceps to the dogs! or the butchers themselves may get slaughtered."

He goes on to say. Arriving at home from a journey, a dentist found a young man suffering with pericementitis by pressure of jaw from a putrescent pulp. The offending tooth was not decayed, but sore to the gentlest touch, and even to slowly continued force, as to make an operation to relieve the distress unbearable. Tincture of *plantago major* was administered—twenty drops to half a glass of water—to be taken in dessertspoonful doses every hour. Next morning the soreness had disappeared, the tooth was opened and proceeded with as is usual in ordinary cases.

STATISTICS OF SOLDIERS' TEETH IN FRANCE.—The French government, according to Dr. Patrick, has gathered statistics of the soldiers' teeth since the first empire, on account of the necessity of teeth for biting cartridges. We find, by their tables, that certain localities favour good teeth, and others bad. The French is the only government that has done much this way. Much more of this work should be done—we should examine and tabulate the condition of teeth in our own country.

In the *Raccoglitore Medico*, June, 1884, Dr. Zakharevitch narrates the death of two young physicians, both of whom lost their lives in consequence of having a molar tooth extracted. In the one case the patient died after ten days from osteomyelitis and in the other the death ensued in six days, and was put down to septicæmia following necrosis of the inferior maxillæ. These deaths are both said to have occurred through the employment of dirty forceps. Their record certainly is a strong protest, if such were needed, against the employment of any save scrupulously clean instruments. Do we always see that the wound our forceps inflict is rendered aseptic? and do we always ensure its remaining in that surgically ideal state? We trust we do!

Carbolic acid crystals heated very warm will relieve violent toothache, and applied to the gum over an abcess, and the lancet moistenedwith it, a painless operation can be slowly performed

Administered internally arnica will relieve traumatic toothache.

Jamaica dogwood extract, applied, will relieve pericementitis after filling a tooth. ****

Lacto-phosphate of lime syrup given in dessert-spoonful doses, twice a day, relieves morning sickness in gestation during three periods.

Many cases of persistent pericementitis, in even advanced stages, have been cured by the application of ice water compress. Teeth having such excessive sensibility as to preclude the possibility of an operation at the first sitting, may become so far advanced towards restoration by the application of the compress as to allow an operation at the next sitting.

THE NEW ENGLAND JOURNAL OF DENTISTRY.

THE SEPTIC THEORY OF DENTAL CARIES, by F. SEARLE, D.D.S., Springfield, Mass.*

(Continued from page 765.)

Prof. Mayr's researches are next quoted—First, he says: "Let us never confound two things: the structure of a tooth and the chemical nature of a tooth, and that the structure may be broken down and the chemical nature not changed. Result No. 1: No acids or chemical lime-salts are found in the innermost decayed mass. While the chemical composition of the innermost layer is almost (and as was seen in some cases completely) identical with that of healthy teeth, the structure is totally different. The soft, white, friable decay is no longer organized, though chemically only slightly differing from the tooth substance—one showing 72 per cent. lime salts. The action at the innermost layer is not in accordance with what we know about the action of acids."

This paper of Prof. Mayr furnishes much evidence in favor of the septic theory.

Dr. W. D. Miller is next quoted:

"The bacilli penetrate far into the dentine, even into the finest branches of the canaliculi. Micrococci penetrate furthest" (i. e., further than the minutest branches (?)). "The fungi produce anatomical and pathological changes in the deeper layers, stop up the canaliculi and necessarily lead sooner or later to the death of the dentinal fibrils. The outer layers of dentine, thereby deprived of nourishment, die and fall a prey to putrefactive agents."

Dr. Miller thus fully confirms the observations of Underwood and Milles, of Lister and Rottenstein, and every other careful observer, and the presence of organisms in the deeper portion of carious dentine may be considered as fully established.

Dr. Miller differs from Underwood and Milles in this: He claims that there is a zone of softened dentine between that occupied by the organisms and the healthy dentine, which is not infected. His opinion is based on microscopical observations, and this after having said that the bacilli penetrate even into the finest branches of the dentine (softened dentine), and the micrococci penetrate further still.

Underwood and Milles, on the other hand, prove that the germs are present up to the uttermost limit of the affected dentine, by inoculating a pure culture with matter taken from the deepest portions thereof—from the very border line of decay. In other words, they find them attacking the living organic tissue of dentine.

The researches of Underwood and Milles, and of Dr. Miller, are unable to solve this question on the theory that organisms do their work by the acids which they produce. The former say: "The essential element wanting in our artificial experiments is present in the mouth." Dr. Miller says: "I am a believer in acids, a believer in micro-organisms, and a believer in an unknown cause; that is, I believe that there are agents active in the production of caries which are yet to be discovered."

Two questions here arise:

1. Is the tooth endowed with living matter capable of taking inflammatory action?

2. Is there evidence to conclude that the results of inflammatory processes in dentine are analogous to those in bone and other tissues?

The discoveries of Professor Heitzmann are quoted in relation to the reticular structure of protoplasm, which connect every tissue and organ as it were in one large amæba, together with those of Dr. Bödecker concerning "The Distribution of Living Matter in Human Dentine, Cement, and Enamel." The writer believes that these investigators have proved beyond all question the vitality of the different tooth structures and hence have demonstrated their liability to inflammatory processes. He says: "To talk of its (the reticular matter's) low vitality, is to contradict the plainest evidence which can be brought to the human intellect."

In answer to the second question, it is said, if you admit the self-evident fact of its ability to live and grow and be healthy, you must also admit its liability to disease.

The consideration of the inflammation theory of Dr. Abbott is next undertaken:

It has been shown in the laboratory of Prof. Heitzmann that dentine has been dissolved and formation of abnormal tissue has taken its place. This has taken place by true physiological, though abnormal, vital processes. When Dr. Abbott was making his investigations in connection with Dr. Bödecker in regard to living matter in teeth, he believed he detected inflammatory changes in the diseased fibrils of the tooth. The initial irritation he accredits to the presence of an acid. Decalcification occurs, to be followed by true inflammation. These processes are present in the dentine; Dr. Mayr, however, denies the presence of acid at the border line of decay, and so we are bound to believe that it is not due to acids that the initial irritation occurs. The germ theory furnishes us with the desired explanation. The micro-organisms contained in the canaliculi destroy the reticulum, "the usual effects of irritation follow" decalcification and death of the reticulum.

INDEPENDENT PRACTITIONER.

FERMENTATIONS IN THE HUMAN MOUTH; THE INFLUENCE OF ANTISEPTICS, FILLING MATERIALS, ETC., UPON THE FUNGI OF DENTAL CARIES. By Dr. W. D. MILLER, Berlin, Germany.

(Continued from p. 763.)

Dr. Miller then details his experiments and tabulates his results as follows :

When the control tube becomes turbid in 5 hours, then :

A tube	containing	an old oxy-phosphate filling becomes turbid in	5	hours.
,,	,,	,, oxy-chloride ,, ,, ,, ,,	5	,,
,,	,,	a gold cylinder becomes turbid in	5	,,
,,	,,	a Hill's stopping cylinder becomes turbid in	5	,
,,	,,	on amalgam cylinder (kept 12 hours in saliva) becomes turbid in	$5\frac{1}{7}$	,,
,,	,,	an agate cylinder (kept 12 hours in saliva) becomes turbid in	$5\frac{1}{4}$	,,
,,	,,	an old amalgam filling becomes turbid in	$5\frac{3}{10}$	,,
,,	,,	an amalgam cylinder (mixed dry) becomes turbid in	$5\frac{3}{8}$	,,
,,	,,	an amalgam cylinder (mixed wet) becomes turbid in	$5\frac{1}{2}$	,,
,,	,,	an oxy-phosphate cylinder (12 hours in saliva) becomes turbid in	$5\frac{1}{2}$	,,
,,	,,	an amalgam cylinder (12 hours old) becomes turbid in	$5\frac{2}{3}$	,,
,,	,,	an old filling of tin and gold becomes turbid in	$5\frac{4}{5}$	,,
,,	,,	an oxy-phosphate cylinder (12 hours old) becomes turbid in	6	,,
,,	,,	an agate cylinder (12 hours old) becomes turbid in	$6\frac{1}{4}$	,,
,,	,,	an iodoform cement cylinder (12 hours in saliva) becomes turbid in	$6\frac{2}{5}$	,,
,,	,,	a pyrophosphate cylinder (mixed dry) becomes turbid in	$7\frac{1}{8}$	,,
,,	,,	a pyrophosphate cylinder (mixed wet) becomes turbid in	$7\frac{3}{8}$	,,
,,	,,	an oxy-chloride cylinder (12 hours old) becomes turbid in	9	,,
,,	,,	a piece of dentine from a tooth impregnated by a copper amalgam filling becomes turbid in	11	,,
,,	,,	an iodoform cement cylinder (12 hours old) becomes turbid in	12	,,
,,	,,	an iodoform cement cylinder (fresh) becomes turbid in	?	,,
,,	,,	a globule of mercury becomes turbid in	—	,,
,,	,,	a cylinder of black oxide of mercury becomes turbid in	—	,,
,,	,,	a cylinder of any copper amalgam becomes turbid in	—	,,
,,	,,	any old copper amalgam filling becomes turbid in	—	,,
,,	,,	a cylinder of oxy-chloride (fresh) becomes turbid in	—	,,

The (—) signifies that the solution remained permanently clear.

We see from these result that the only filling at present in use which exerts a continual anti-ferment action upon the walls of the tooth and its immediate surroundings, is the old copper amalgam; not that, but the very substance of the tooth containing such a filling itself becomes antiseptic, a piece of bluish or bluish-green dentine from such a tooth very powerfully retarding the development of the fungi, and, indeed, in two cases completely destroying them. Secondary decay in such a case would be next to impossible, where anything like cleanliness was observed.

"This result," says Dr. Miller, "is well supported by observations which I have had abundant opportunity to make for the last five years, here where this material is so extensively used, and I do not hesitate to say that if our only object is to check the destruction of tissue by caries, there is no material at present in use with which this object may be so surely accomplished as with a good copper amalgam." Skogsberg's iodoform cement was not tested. It has undoubtedly strong antiseptic properties. Old fillings of tin and gold possess slight antiseptic power, still less (almost zero) old amalgam fillings (not copper). The very inconsiderable power of amalgams to prevent the development of ferment fungi is a source of some surprise, since we have been accustomed to look upon them as very active in this respect. It is probably a mistake to attribute the hardening of dentine under amalgam fillings to the antiseptic action of the amalgam. Dr Miller advises, "Adjust the dam, excavate carefully, especially the margins, wash with a strong antiseptic, dry thoroughly with bibulous paper and then with the hot-air syringe, till the surface of the dentine becomes whitish, paint with a thin solution of copal varnish, dry again with warm air, then put in the gutta percha in small pieces, one after the other, being *sure* that each piece sticks to its place, especially along the margin, just as if you were making a filling of gold. A piece which has once moved in its place must not remain, as a leak will be the result. Remove such a filling after two years, and the cavity will often be found in an excellent condition for a gold filling."

The oxy-chlorides when first mixed, are powerfully antiseptic, but soon lose their energy when exposed to the action of saliva. The oxy-phosphates are very much inferior to the oxy-chlorides in antiseptic power, and should never be used in cavities where there is much soft dentine. Dr. Miller believes his results cannot, from the nature of his experiments, be accepted as final.

Caries of the teeth, except in the later or last stage, is the result of a ferment process, and the organisms found in the deeper parts of decaying dentine, are ferment organisms. The decomposition of the pulp and contents of the root canal, attended by bad-smelling products, is, on the other hand, a putrefactive process, in which entirely different species of fungi are concerned. Whether or not the results obtained for the fungi of caries would apply equally to those putrefactive fungi, is a question which can be settled only by experiment upon pure cultures of the same.

Besides the action of acid forming fungi, a most powerful influence, which we do not well understand, is exerted by the nutritive processes in the teeth themselves.

Old practitioners know that mouths long under observation, and practically free from caries for years, will at once, on account of some sudden change of health, show a general breaking down or crumbling of the teeth, *en masse* in the space of a few weeks. Some say the ocean voyage spoiled their teeth ; others attribute it to a change in the climate, food, etc.

There is a cause neither bacteria nor acids (either ferment or otherwise). To explain this action, Dr. Miller writes, "The limesalts of the teeth are supposed to form, with the organic matter of the tooth, a definite chemical compound, and it is probably due to this fact that simple salts of lime are so much more readily soluble in weak acids than pulverised tooth-bone, or that the tartar upon the teeth is so much more easily soluble than the teeth themselves ; so that when any one rinses his mouth with vinegar, and afterwards finds lime in the vinegar, we know that the lime, in by far the greater part, if, indeed, we may not say altogether, came from the tartar. Now, though there is no positive evidence for the supposition, it is certainly not altogether improbable that, as a consequence of certain derangements in the nutritive functions of the teeth resulting from a change of health, etc., etc., a dissolution of the affinity between the lime-salts and the organtic matter may take place, thus setting free the easily soluble lime-salts, which are then carried away in solution or washed out mechanically."

The action of tobacco upon the fungi is worthy of notice. Five grammes of old Virginia plug were boiled fifteen minutes in fifty c. c. of water, the loss by evaporation being constantly replaced ; the decoction was then filtered, and a portion added to an equal volume of salvia with sugar. This produced a mixture scarcely stronger than that which many have in their mouths all day, and in it the fungi were able to live with difficulty.

The action of tobacco smoke from the first, third, or last quarter of a Colorado Claro cigar was found amply sufficient to sterilize ten c. c. of a beef-extract-sugar solution, previously richly infected with caries fungi.

We need, therefore, a material for filling which is not only antiseptic at the time of insertion, but which remains permanently so after being inserted. Since we cannot remove all the carious substance or destroy all the germs, Dr. Miller has set himself to determine the relative antiseptic power of different filling materials (cements, amalgams, etc.), both at the moment of mixing and when thoroughly dry.

DENTAL COSMOS.

Calcification and decalcification of the teeth.

By C. N. Peirce, D.D.S., Philadelphia, Pa.

It is stated that the dental tissues show concentric layers or zonal shades of growth just as occurs in vegetable structures. At the same time it is only possible to guess the age of a tooth by the examination hinted at. A tabular chart is given from which it is said that we may see how from the seventh week of intra-uterine life when the embryo is very small, preparation is made for the enamel germ; this is followed in the ninth week by the dentine germ. These germs pass through progressive stages to the seventeenth week when the incisors and cuspids receive depositions of lime salts. The end of the nineteenth week the molars show the same process. From this point the tooth germs and calcification proceed simultaneously to the time of birth. At this time the crown of the eight incisors are calcified; the cuspids and first molars are two thirds calcified; the temporary second molars have their crowns half calcified. After the next three months the vascular papilla or primative tooth pulp lies close to the sharp irregular edges of the calcifying tooth crowns. Any irregularity or want of co-adaptation causes pressure and, therefore inflammatory mischief in or about the papilla, hence occur sympathetic disturbances. The next point considered is the epoch of complete calcification of the apical ends of the teeth. Deciduous teeth, we are reminded, may through dental caries have their pulps exposed before the root is completely grown, hence, pulp devitalization cannot be had resort to.

The calcification of permanent teeth is next considered and illustrated by an elaborate chart. At the fifteenth week preparation for the first four permanent molars occurs, in the sixteenth week the enamel organ for the twenty anterior permanent teeth appears, hence to birth the germs pass through various stages antecedent to calcification. At birth there are twenty deciduous teeth well advanced towards calcification and there are germs of twenty-four permanent teeth. Calcification in twelve of these commences the first year; the germs of the second permanent molar appears in the third month; that of the third during the third year after birth.

During the process of calcification the permanent teeth are subject to abnormal conditions alike of nutrition and pressure. Various irregularities result. These will be influenced in extent by the length of time they have been subjected to mal-treatment. If nutritive disturbances appear before the tenth year, evidence will be shown in the permanent teeth. It is important to notice in this connection the condition of growth and calcification of the root of the tooth at this juncture; a glance at Dr. Peirce's diagram makes this clear at once. The first four permanent molars and eight incisors are calcified in part before the end of the first year; before the end of the second year twenty-four teeth are in this condition. In the fifth year the second permanent molars commence calcification; while the eighth, the wisdom teeth reveal the same condition. Interrupted dentition rarely occurs among the permanent teeth, but the cuspids and bicuspids may be delayed by the deciduous teeth persisting, or by the contracted state of the jaws. Either of these conditions may lead to the impaction of the third molar with its attendant train of evil consequences. The decalcification of the roots of deciduous teeth cannot, we are assured, be arrived at with any degree of certainty. The average period of its commencement in the incisors is before the close of the fourth year. Normally it travels from the end of the root towards the crown; it takes three years to accomplish this. At this period extreme care becomes necessary in the application of arsenical paste for devitalization of the pulp. The roots of the first deciduous molars commence about the sixth year and end in the tenth year; the second molars are a year later; decalcification of the roots of the cuspids takes from the eighth to the twelfth year. The times given above are approximate only; they are subject to variations in families. The absorption is physiological and ends when the pulp dies. Three factors seem requisite; 1st it should commence at the end of the root; 2nd that a vascular papilla should exist close to the surface of absorption; 3rd that the vitality of the pulp be intact. Decalcification of deciduous teeth occurs even when there is no pressure of a permanent tooth, hence she common explanation cannot be believed. Similar processes of absorption occur in the anterior border of the ramus of the lower jaw. These are also bone-cased cavities and canals increased in size by absorption. Roots left in chronic alveolar abcesses present a worm-eaten appearence. This is a pathological, not the physiological process indicated above. Calcification of deciduous and permanent teeth does not always correspond with the period when eruption should occur. Premature removal of the gum may expose a crown when the root is not yet calcified. Similarly a delay in the eruption of permanent teeth may occur until the period when the roots are calcified.

Literary Notices and Selections.

EXCISION OF THE LEFT SUPERIOR MAXILLA: REPARATIVE DENTISTRY.

By O. C. JENKINS, D.D.S., Ann Arbor, Michigan.*

MRS. MARY F., age thirty-seven, residence, Ann Arbor, Mich., admitted to University Hospital, February 8th, 1882. Six or seven months before she observed a small lump, no larger than a kernel of corn on the left side of the nose, midway between the ala and the inner third of the eye. This had rapidly developed until it closed the eye of that side and projected from the cheek, forming a tumour nearly as large as one's fist. The case was carefully examined by Professor Donald Maclean, on February 13th, and excision of the left superior maxilla pronounced imperative. On February 18, the patient was anæsthetized, and beginning at the internal canthus an incision was made along the side of the nose downwards to the mouth. Another lateral incision beginning at the same initial point, was carried across the prominence of the malar bone to the root of the zygomatic process. The morbid growth was then rapidly and fully exposed.

The anterior face of the antrum and a portion of the floor of the orbit were found to be invaded, being softened and somewhat broken down. The morbid growth was then separated from the healthy bone by means of a dental-engine saw and the bone forceps ; and on the conclusion of this, the whole of the left of the superior maxilla and a triangular segment of the right (the right central incisor being removed with it) had been excised. The wound united by the first intention, and when the patient was discharged on March 4th, the cicatrices were almost imperceptible.

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*From "Physician and Surgeon," Ann Arbor, Mich.

April 8th. No return of the tumor ; the finger can be passed up to the floor of the orbit, and can be seen when pushed behind the anterior nares.

On July 31st, 1882, the patient consulted me. It was seen that all the upper teeth on the left side, including the right central incisor and also the maxillary bone up to, and including part of, the floor of the orbit had been removed. The patient complained that since the operation, phonation had been very imperfect, and that when drinking, fluids would run back into the cup—through the nostrils—unless the head was thrown well back.

After a thorough examination of the case, I proceeded to take an impression, although the difficulties seemed well nigh insuperable. The requirements were both physiological and æsthetic. I was to restore the impaired functions of mastication, deglutition and phonation, and also, as far as possible, to overcome the facial deformity. I was to supply a symmetrical cheek, to afford a hard palate, to protect the excavated orbit, and to effectively antagonize the teeth.

The impression was made of wax and plaster, and taken in two sections. The wax was carried into the cavity as far as the floor of the orbit, and also into the nasal cavity, thus making a partial roof for the mouth. This was kept in place by an assistant, while I applied plaster, in a large impression cup, firmly against the wax and the muscles of the cheek, retaining all until the plaster had set. The wax had hardened, and the plaster adhered to it so firmly, that the entire cast was removed in one piece—much to my delight.

Before making a model, I began at the top of the wax and trimmed out the centre of it down to the plaster, in order to secure an artificial maxilla of proper weight and form. In grinding and articulating the teeth, I proceeded as one would do with an ordinary vulcanite plate. There is a new roof to the mouth, (the remaining portion of the hard palate being used for its suction), and a new jaw and cheek bone on the left side.

The patient's appearance after using the artificial substitute for one year and a-half was vastly improved. She wears the apparatus with ease and comfort. She can now thoroughly masticate all food ; can drink without regurgitation, and articulates distinctly. Her case, which was desperate in the extreme, and without the operation, would soon have terminated fatally, is another illustration of the results of modern operative surgery. The relief of her annoying and embarassing condition, that existed after the operation, is only one of the many triumphs of reparative dentistry.

STATISTICS OF DISEASES OF TEETH IN RUSSIA.

By Dr. Holstein.*

It is always instructive to see the statistics from other lands which convince us that diseases of the teeth are everywhere subject to the same laws. Therefore the following statistics from Russia will not be uninteresting.

Prof. Sklifassowski has attempted to discover the amount of disease in the teeth of the inhabitants of St. Petersburg, and found that 80 per cent. have caries in the teeth—enormous number, but not to be wondered at. It is known that the civilization of great towns exercises a bad influence on the teeth. In what way? The question is not answered by Herr Sklifassowski, who is obliged to be contented with known facts. The statistics, which show that caries increase during a sojourn in a large town, are interesting. He found that amongst people who had lived in St. Petersburg two and a half years 25 per cent. had caries, whilst a sojourn of five years increases the number to 59½ per cent. The first molars were principally attacked. 12⅐ per cent. of the patients who went to Sklifassowski had all four of the first incisors destroyed. It must here be remarked that three quarters of the patients were at an age when the development of the teeth was not complete, that is to say, they possessed no wisdom teeth. So we see that the quite young who have only just cut the third incisors quickly fall a prey to caries. Dr. Wagnitsch has examined ten hundred and ninety-one soldiers on the subject of their teeth. Seven hundred and ninety-nine of them had sound teeth and two hundred and seventy-two (27 per cent) had caries. When one thinks that they were chiefly young people from 21 to 27 years old, the number of those who suffered from diseased teeth was very considerable.

As known, it has been observed, that fair people have a greater inclination to diseases of the teeth than dark people.

Sklifassowski found amongst fair and red-haired individuals 73 per cent.

Brunettes	70 per cent.
Black-haired people	60 „

This might be taken as decisive, but Professor Sklifassowski says it is no sufficient proof, as the greater number of his fair patients belong to the higher classes in which, as is known, caries is more often found than in the lower classes.

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* A paper which appeared in the "Centralblatt für Zahnheilkunde."

Franzins and Wagnitsch come to the same conclusion as their tables show:

FRANZINS.

Colour of Hair.	No. Examined.	No. with Sound Teeth.	No. with Caries.	Per cent. of Sick People.
Fair	215	159	86	40
Brown	365	221	144	39
Black	40	25	15	37
TOTAL	620	405	245	

WAGNITSCH.

Blond	160	120	40	25
Brown	386	253	133	34
Black	77	54	23	30
Red	4	3	1	
TOTAL	627	430	197	

As to the distribution of carious teeth between the upper and lower jaws, Dr. Wagnitsch gave the following numbers:

UPPER JAW.

Right.	No. of Teeth.		Left.	
154	336	663	327	146
LOWER JAW.				
182	363		181	

So the opinion was confirmed that the teeth of the lower jaw are more often carious than those of the upper, but not the opinion that caries is more often found on the left than on the right side. The distribution of disease amongst the different teeth is shown by Wagnitsch,

Molars		27	4.07	per cent.
Canine		8	1.40	„
Molars	I.	28	4.22	„
„	II.	151	22.77	„
„	I.	291	43.89	„
„	II.	117	17.64	„
„	III.	41	6. 8	„
		663		

In the jaws the carious teeth are thus distributed:—

UPPER JAW.

7...28...56...41...7...4...11...10...2...7...3264...24...7.

Right	Molars.			Molars.		Canine	Incisors.		Canine	Molars.			Molars.	
	III	II	I	II	I					I	II	I	II	III
	16	34	91	35	2		133	1		12	43	80	31	11

LOWER JAW.

From these statistics only a few general conclusions can be drawn.

1. The first molar is more often diseased than the other teeth and more often in the lower jaw than in the upper.

2. The canine teeth possess the greatest power of resistance, then the incisors, the first grinders, and lastly the third molars.*

3. In the lower jaw the teeth are more often diseased than in the upper.

4. The opinion that the right jaw teeth are less often diseased than the left is not confirmed.

5. The same can be said of the supposed connection between the color of the hair and the state of the teeth.

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

By J. William White, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

(Continued from page 722).

Dental Amorphism.—A third form of the heredo-syphilitic influence is constituted by dental amorphism, so termed from "*a*," privative, and *morphe*, form. It is simply the condition of a tooth which, instead of its physiological form, has assumed some other shape. This variety may be placed very nearly in the same class with erosion as to frequency. Here again, as in the preceding variety, it is but a question of partial and non-systematized malformations. In other words, amorphism concerns neither the dental system in a general way, nor any class of teeth in a particular manner ; it affects separately one or more teeth, and when it affects several it is far from confining itself to the law of symmetry which is so constant and so remarkable in the erosive malformations.

In a first group figure teeth with simple deviation in shape from the normal type, having lost more or less of the characteristics of the class to which they belong and assumed those of another class. Thus we sometimes observe incisors which, in place of being flattened antero-posteriorly, are thickened, conical, cylindrical, and approach the form peculiar to the cuspids. It is thus, reciprocally, that the cuspids, in place of being cylindrical in body and with conical cusps, become flattened antero-posteriorly, with a horizontal edge. A fine example of the kind is now among my heredo-syphilitic patients. She has a superb set of teeth; but examined anatomically, a singular anomaly is presented, which would probably not have been noticed at first sight. The four cuspids are, as regards form and appearance, like incisors, flattened antero-posteriorly, and in place of a pointed cusp, terminate in a horizontal edge, like the incisors. They are identical in every respect with the neighbouring incisors. Conversely, another patient in our wards, a few months ago, presented two superior lateral incisors literally tranformed into cuspids.* This transformation of type is not generally apt to be so complete. These two are the only cases where I have observed it to such a degree. But we frequently meet with heredo-syphilitic patients whose teeth are modified in type by some partial anomaly—notably by characteristics borrowed from a different class.

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*The result is very satisfactory. In other European countries and in the United States the case is quite otherwise. Should not the inference that the upper and lower teeth should be reckoned together be falsified? As the upper incisors are often diseased, but the lower scarcely ever, and the frequency of caries in the upper and lower molars is very varied. Also the numbers for the two molars are quite satisfactory.

A second group comprises divers malformations, changing in many ways the form of certain teeth, and sometimes ending in true monstrosities. The incisors, for example, present themselves frequently with a free border of abnormal shape. I have seen several times (an example is at present in our wards) the inferior incisors terminate in an oblique edge, as if they had undergone a transverse cutting. At other times we have what are called fluted teeth, that is to say, they are overrun on their crowns by projections,—either transverse or vertical ridges which separate small gutters. At other times we observe on a tooth some accessary tuberosity—a supernumerary tooth. One of our patients had a small molar flanked on its interface with a kind of conoidal apophysis.

Then come the strange and innominate forms. The superior lateral incisors appear sometimes strangely reduced in their transverse diameter—prolonged vertically, and "resembling ivory pegs more than teeth" (Hutchinson). We have seen certain teeth, small, stunted, curtailed, conoidal, assuming the shape of "horns." Hutchinson has represented in his book† a superior central incisor which, at once notched and transversely widened on its free edge, recalls sufficiently well the appearance of a tricorn (three-horned).

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*This patient, aged thirty years, presented, in addition, the remains of a semi-lunar notch upon her two superior central incisors. One of her sisters, five years older, presented likewise multiple and typical dental malformations. Both were evidently heredo-syphilitics, and owed to their original diathesis different symptoms with which they had been affected in their infancy and youth—(keratitis, iritis, gummata, etc.). See Thesis of Couzon (Contribution to the Study of Interstitial Keratitis in Hereditary and Acquired Syphilis, Paris, 1883 (where this observation will be found related in detail.

†Op. cit., Fig. 6, I.Plate

A special form is furnished us by the variety described under the name of the "pegged tooth" of the English writers, who seem to accord it a special interest, to judge merely from the frequency with which we find it mentioned in their observations.

In this form the tooth is notably reduced towards its neck, as if cut in upon its lateral borders at the level of the neck, causing it to appear enlarged at its edge. This form is described by M. Parrot, in the first dentition, under the names of axe-blade atrophy, axe-like tooth.*

Finally, the tooth may be so absolutely changed as to be shapeless. I have seen, for example, in a young man affected with hereditary syphilis an inferior cuspid so strange in appearance that it in no way resembled a tooth. It was a sort of bony production, very irregularly cylindroid, yellow, rough, angular, knotty. One would have said it was a pebble, rather than a tooth, planted in the gum. Hutchinson has observed and represented a case of this kind where several teeth were affected with extraordinary malformations.† M. Magitot, who has examined Hutchinson's collection, says he found in it several types of these mis-shapen teeth, "having the appearance of deformed stumps"—of truncated cones, true morphological monstrosities.‡

Dental amorphism, in the different varieties which it can assume, usually occurs with one or the other of the two classes of malformations previously studied, erosion and microdontism, sometimes with both. This is important to notice, for such a coincidence is significant and well shows that these forms of dental anomaly are connected as regards origin—that is to say, derived from one and the same cause. For example, in one patient we have at the same time—First, typical erosions, notably the crescentic erosion of the superior central incisor; second, very marked lesions of microdontism; third, lesions of amorphism on the cuspids, which resemble incisors.

VULNERABILITY OF THE DENTAL SYSTEM.—In a general manner we may say that the tooth affected by syphilis, whatever may be its objective form, is a tooth pathologically constituted, which carries in it the elements of decline, of disorganization. It is essentially a vulnerable tooth—that is to say, predestined to secondary degenerations for the following reasons: First the syphilitic tooth is generally poorly protected against exterior influences. In the eroded forms, for example, it is not protected at the level of the lseion, or only with a layer of enamel more or less abnormally thin. In the second place, the eroded tooth has not only an imperfect surface, but zones of globular dentine, as we have previously seen, furrow it in its entire thickness. According to M. Magitot, "it is a tooth composed of parts deprived of homogeneity and equilibrium in the relative proportions of their anatomical and chemical elements." Besides, M. Parrot has established that the enamel of this tooth is not only thinned, but furthermore that it is pathologically affected; that it is brittle or chalky and only slightly adherent.* Sometimes also, the syphilitic tooth presents itself "composed of lamellated layers, irregularly superimposed, not adherent or feebly so between themselves, and recalling to mind the stratifications of an oyster shell." This variety was designated by Dr. Delestre, a distinguished dentist, under the name of the "schistous tooth."

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*Progrès Medical, 1881.

†Trans. Path. Soc. London, Vol. x., 1859.

‡Clinical Studies of Dental Erosions, p. 12.

Finally, alterations more singular and still undetermined as to their nature are sometimes met with in our patients. M. Magitot recently related to me that he had observed on a heredo-syphilitic patient several teeth strangely affected. He had never seen anything like them previously. "They were," he said, "absolutely greenish teeth—greenish on the surface and throughout ; composed of a substance of slight resistance, friable, very extraordinary, unknown to me, but nevertheless eminently pathological."

All these anomalies, all these defects of structure, constitute so many conditions of lessened resistance, of precarious vitality, of easy destruction and premature decay.

The syphilitic tooth is also habitually subject to secondary deteriorations, which change its appearance and lessen its chances of duration. It very frequently presents traumatic lesions—traumatic through progressive wearing, fracture, chipping, crumbling, etc. The dental cusps affected by erosion, thinned, partially or totally deprived of enamel and brittle, do not long resist the wear of mastication, but break, shell off, and are destroyed. It is thus that these small stumps of dentine,which constitute the cusps of certain eroded teeth, crumble, break, and disappear in the course of a few years, leaving a rough surface which the alimentary trituration soon polishes. The semi-lunar notch of Hutchinson is formed in no other way. We have seen that at the commencement the tooth destined to show later this special malformation presents a free edge sown with stalactiform projections, with small conical eminences, with spinules, etc. All this roughness, the remains of the initial process of erosion, disappears in a short time, leaving in its place an empty notch which soon becomes polished from use. Such is likewise the mechanism of the "short tooth"—the type so commonly met with on the first molars. It is but consecutive to the functional attrition of the cusp of the tooth—that is to say, to the breaking down and disappearance of the entire eroded zone. It is not rare to meet with subjects who, still very young, present several of their teeth worn as if they had been filed, having lost a quarter or even a third of their crowns. and terminating in a plane surface, polished and yellow, where the denuded dentine appears. Dr. Chaboux relates the case of a young girl of thirteen, whose cuspids and first molars were absolutely "worn flat," the crowns having almost entirely disappeared.*

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*See also Descamps on Dental Atrophy in Children produced by Hereditary Syphilis. Paris Theses, 1872, No. 305.

(To be concluded.)

Dental News.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MONTHLY MEETING, JUNE 9TH, 1884.

J. SMITH TURNER, M.R.C.S.,L.D.S.ENG., President, in the Chair.

THE Minutes of the previous meeting having been read and confirmed,

The following gentleman was balloted for and elected a non-resident member:—Richard Theodore Stack, D.M.D. Harvard, M.D., Dublin, F.R.C.S.I., Professor of Dental Surgery, Roy. Coll. Surg. of Ireland; Surgeon to the Dental Hospital of Ireland, &c., 10, Westland Row, Dublin.

THE following nominations are now under the consideration of the Council;—Alexander Kirby, L.D.S., 8, Harpe Place, Bedford; John Brooks Bridgman, L,D.S.I., St. Giles Street, Norwich; John Alexander Fothergill, M.R.C.S. and L.D.S. Eng. (D.D.S. Pennsylvania), Northgate, Darlington.

Mr. D. HEPBURN in the absence of Mr. Weiss, announced, that Mr. Tod, of Brighton, had presented to the Library a framed engraving of a picture by Gerard Dow representing a Dutch dentist.

Mr. HUTCHINSON reported that some valuable additions had lately been made to the Museum. Mr. Charlesworth had presented two enamel plates of the molar of an Indian elephant. These were interesting inasmuch as they showed how an elephant's molar was built up ; the plates of enamel were first formed, then filled up with dentine, and the space between them afterward filled with cementum, thus uniting them into one solid tooth.

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*Op. cit., p.38.

Mr. Charlesworth had also sent a portion of the upper maxilla of a horse, dissected in such a way that the bony implantation of the molars was well displayed.

Mr. HUTCHINSON added that the Council had authorised him to purchase some very interesting specimens which had not hitherto been represented in the Museum. Amongst these was a very fine skull and lower maxilla of a rhinoceros with the entire series of molars complete and perfect, including the first molars, which were very small and usually wanting in rhinoceros crania. The lower maxilla had also all the molars perfect, and had the left outer large incisor in place as well as the two inner small cylindrical incisors ; the right large incisor was missing, its socket having been filled up with a bony deposit. The rhinoceros offered very interesting dental phenomena ; the three or four species found in Africa had incisors in the fœtal state which never cut the jaw. But in the Indian rhinoceros these incisors arrived at maturity, and presented the characters shown in this specimen. These crania were, however, very rare and difficult to procure.

The other specimens were a cranium and lower jaw of the *Tapirus Bairdii* with some of the permanent molars in a germ state ; the cranium and lower maxilla of a young tapir, showing deciduous molars, canines, and incisors. These specimens, though osteologically imperfect, were interesting and rare from a dental point of view, as the incisors and canines were rarely complete in these crania. The next four specimens were portions of the upper and lower maxilla of the *Tapirus Americanus*, and were supposed to have belonged to the same individual.

He had also to acknowledge the receipt of a plate, made for a syphilitic case, from Mr. Pink, and a lower jaw from Mr. G. W. Skipp, which had been found near Essendine, in Lincolnshire, together with some Roman remains and coins ; it was in remarkably good preservation, the teeth being very perfect.

He would also call attention to a beautiful specimen of a fossil tooth of the mastodon sent for exhibition by Mr. Charlesworth.

Mr. CHARLESWORTH said the specimen he showed was a very perfect tooth of the *Mastodon Andium*, described by

Cuvier forty years ago, but which was exceedingly rare. The common form was the *Mastodon Ohioticus*, of which nearly four hundred specimens were to be found in different collections, whilst of the *Mastodon Andium* he did not believe there was another example as perfect as that which he then had the pleasure of showing.

Mr. Storer Bennett showed a curious old instrument for extracting teeth which had been handed to him for the Museum by Mr. Hawksley. It consisted of a small vice with a jack-screw on one side. When this was fitted on the tooth, the screw adjusted, and a sufficient amount of leverage applied, it was evident that *something* must come. He had looked through the collection of old instruments in the Museum, amongst which were some very remarkable contrivances, but there was not one similar to this.

Mr. W. E. Harding (Shrewsbury) said that about four years ago he was called upon to treat a case of serious injury to the deciduous upper incisors, and he thought the sequel of the case might be interesting to the Society. A child, then three years old, seized up the baby's feeding-bottle, ran away with it round the room, and fell, striking the upper centrals against the bottle. When Mr. Harding saw her he found the root of one tooth projecting through the floor of the nostril, whilst the other was displaced backwards. He drew down the one and brought forward the other into place, securing them with ligatures to the neighbouring teeth. In the course of the next ten days the tooth which had been brought down from the nostril became loosened by suppuration and came away; the other became firm. The parents were now anxious to know whether any injury to the permanent teeth would result from the accident, as to which Mr. Harding himself did not feel quite free from misgivings, though he gave a hopeful prognosis. The child was now seven-and-a-half years old; the centrals had lately been erupted, they appeared quite healthy, and free from any sign of injury. Mr. Harding thought that the root of the tooth must have been driven upwards and slightly outwards, thus missing the germ of the permanent tooth, which would be behind it.

Mr. Harding said he had lately performed rapid and forcible torsion on an upper central, and the result had been very satisfactory. Three months had elapsed since the operation; the colour and translucency of the tooth were quite unchanged, and the pulp appeared to be living and healthy.

He also showed a model of a case which he had lately had under his care, in which the crowns of the incisors had been entirely destroyed by an edge-to-edge bite, the pulps having been completely calcified and the pulp chambers obliterated. He had never before met with a case in which such thorough destruction had resulted from this cause.

Mr. S. J. HUTCHINSON said that about four years ago he met with a case somewhat similar to that related by Mr. Harding. A child aged two-and-a-half had one of the upper centrals knocked out by a fall, and the same inquiries were made as to the effect on the permanent dentition. His reply was that the appearance of the permanent tooth might possibly be delayed, but that it would probably come through all right. The tooth had lately appeared and was quite uninjured, though inclined forwards ; but as two of the patient's sisters had the same deformity, it was probable that this was a family peculiarity and not due to the accident.

Mr. OAKLEY COLES said he was not quite sure that Mr. Harding had adopted the best course in treating this case. Would it not have been wiser to have removed the tooth at once, rather than to leave it as a possible centre of suppuration ?

(To be Continued)

USE OF MEDICINE IN DENTISTRY.—A recent author, speaking before the Illinois State Dental Society, says:—"Two deciduous incisors were forced from the sockets by an accident, and were replaced, after applying carbolic acid and glycerine to the sockets, and gave no further trouble. ***

OBITUARY.

WE regret to announce the death on the 19th ult., of Thomas Dixon Miller, late of Newhall Street, Birmingham, in the 57th year of his age. Mr. Miller has been in practice for upwards of twenty years in Birmingham, and was universally respected by his brother practitioners both medical and dental. He held the diploma of D.D.S. of the Baltimore College, and was honorary treasurer of the Midland Odontological Society. He appeared in robust health until a short time ago, when he was ordered away for a month's change, and consequently he went to Buxton; but gradually became worse and returned home where he rapidly sunk, the cause of his death being cancer on the liver. His loss will be much felt among the local dental practitioners, for he was at all times most unselfish and courteous to all with whom he came in contact.

Correspondence.

To the Editor of the "British Journal of Dental Science."

Sir,—I hope by the evidence of my personal experience to set at rest the unfounded theories advanced at the present day as to the causation of Dental Caries by micro-organisms.

I left home in Scotland in 1860 to go as assistant in an English town, having, when I left, a perfect set of teeth. Before I had been in England twelve months I had several decayed teeth. When I became aware of the fact, I at once set to work to discover, the cause, and if possible to remedy the existing state of matters. The result of my investigation was, that I found the decay was the result of the action of acid, and the acid was formed in the stomach by improper diet.

Before I left home my breakfast consisted of porridge and milk principally, and the bread used in the household as a rule was two days old.

In my new abode instead of porridge for breakfast, hot cakes, new from the oven, tea, coffee, &c., and always new bread at meals. It was some time before my stomach was affected, but at length I began to suffer from acid eructations, and heartburn (erroneously so called), really stomach burn. This affected the oral secretions which most certainly was the cause of decay, as the sequel will prove. I took steps to alter my diet, and to neutralise the acid secretions, and used to send to Scotland for oatmeal, which, in conjunction with coal in cleanings. has had the effect of arresting decay; so that to-day the majority of my teeth are quite sound, with the exception of those that had been affected in 1860.

Another feature in decay I have observed, and which I have not seen taken notice of elsewhere is that there are two classes of decay in carious teeth in the majority of cases, I find the decay of a moist tough consistency, but in other cases it is what I should characterise as dry rot, on being removed by the excavator it comes away in the form of a dry powder.

That micro-organisms are present in carious teeth no one will deny, but they are introduced from the food we eat, the water we drink, and the very air we breathe, it is an acknowledged fact that many parasites are found in other organs in the bodies of man, and the lower animals. Finding congenial quarters they settle, increase, and multiply.

James Hardie.

12, Lothian Road, Edinburgh.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From July 1st to July 31st, 1884.

Extractions	Children under 14	382
	Adult	984
	Under Nitrous Oxide.	543
Gold Stoppings		158
White foil ditto		24
Plastic ditto.		602
Irregularities of the Teeth treated mechanically		120
Miscellaneous Cases		191
Advice Cases		97
Total		3101

S. C. Buckland,
House Surgeon.

DENTAL HOSPITAL REPORTS. NATIONAL DENTAL HOSPITAL.

Monthly Statement of operations from July 1st to July 31st, 1884.

Number of patients attended		1468
Extractions	Children under 14.	421
,,	Adults	990
,,	Under Nitrous Oxide.	411
Gold Stoppings		84
Sheets of Gold used independent of Pellets		
Other Stoppings.		419
Advice and Scaling		253
Irregularities of the Teeth.		126
Miscellaneous		148
Total		2848

Wm. Todd Paterson,
House Surgeon.

JOURNALS RECEIVED.

Glasgow Medical Journal; British Medical Journal; D'Art Dentaire; Independent Practitioner; Dental Practitioner; Pharmaceutical Journal; Revue Odontologique; Progres Dentaire; Dental Review; Syllabus of Queen's College of Birmingham; Deutsche Monatsschrift für Zahnheilkunde; Ohio State Journal; Syllabus of Philadelphia Dental College; Centrallblatt für Zahnheilkunde; Chemist and Druggist; Dental Cosmos; New England Journal of Dentistry; L'Odontologie; Dental News; Items of Interest.

ERRATA.

Page 775, tenth line—for *necroced* read *necrosed.* Page 756, for *Abbot* read *Abbott.* Sixth line for *experinced* read *experienced.* Twent-fifth line, for *fances* read *fauces.* Twenty-sixth line, for *tonsil* read *tonsils.*

British Journal of Dental Science.

No. 400. LONDON, SEPT. 15, 1884. Vol. XXVII.

ADDRESS DELIVERED BEFORE THE BRITISH DENTAL ASSOCIATION AT THE ANNUAL GENERAL MEETING, 1884.

By Spence Bate, F.R.S.

Gentlemen—It was a source of extreme regret that I found the period fixed for the Annual Meeting of this Association to be at such a time that I should not be able to avail myself of the pleasure of being present, without interfering with engagements, long previously entered into, in connection with the exceptional meeting of the British Association in Canada.

That the meeting of the British Dental association at Edinburgh this year will be a successful one I have no doubt. The Association has within itself all that is necessary to make this a certainty, quite apart from the fact of its meeting in a town remarkable for being the home of scientific and literary giants, as well as of poetical and historical reminiscences.

With Edinburgh are associated the names of Goodsir, Blake, Nasmyth, and others, who by their researches into the structure of the dental tissues have rendered important services to the branch of anatomy which is our special study, the pathology of which it is our constant effort to unravel, and the ability and determination of an earnest body of men when working together for a common end, will seldom long continue without producing marked advancement in knowledge and important results in practice.

Our Association is as yet young in its combination, and therefore exists more as a collective congregation of persons working individually—I speak of its scientific character—than of a society marching towards a goal with a common purpose.

No doubt but that individuals often work with an enthusiasm that surmounts all difficulties, and obtain results of most remarkable value. But, as a rule, we are all prone to work with a fixed prejudice that inclines us to view things through a pre-conceived medium, to the detriment of accurate investigations and the delay of definite knowledge. This, I think, is capable of being overcome, and should be met by the appointment of small committees of men working in the same branch, who, by communicating together, would be able to furnish a report on the subject at a future meeting of the Association. Such a committee working together would be enabled by division of labour, and by inter-communication of the information obtained, by an investigation of all previous knowledge of the subject, together with the resultsof original investigation, to keep themselves and their readers generally abreast of the most reliable information past and present, and preclude the constant republication of observations and experiences that have long since appeared and been forgotten.

A committee might be appointed to investigate the best means of preserving and utilising the roots of teeth that remain in the mouth after the loss of their crowns by disease or accident, instead of removing them, or allowing them to remain as irritant bodies in the jaws, hidden by the plates of artificial teeth which cover them.

The value and importance of these remains of teeth when restored to a healthy condition and rendered more or less useful, either as carriers of artificial crowns or as supports to substitutes, being established, would lead to the enquiry which individually, I strongly support, whether excepting in cases of dental regulation and preservation, a tooth should ever be removed from the mouth, excepting in those cases where it may be the source of evil excited in more distant parts.

Excision I believe to be better surgery than extraction in all those cases of simple odontaglia where the disease is confined to the tooth, and where the crown is too far gone for restoration excepting by an artificial replacement.

Extended inquiry by an appointed committee on this subject would lead, I believe, to a considerable revolution in the practice of dental surgery, to the honour of our craft, and of wonderful advantage to our patients.

Another subject for a fuller experience than can be afforded by individual inquiry, is that of replantation of teeth for the purpose of the reduction of disease, and their final restoration to usefulness within certain limits. That this has been done successfully by some is well known, but it has also been attempted by others and ended in failure. It naturally follows that the two experiences lead to a divergence of opinion that is most unsatisfactory, and can only be set at rest by the fuller knowledge afforded by more extended observations.

The cause of caries has been made a subject of study by many, and the futility of individual research is exemplified in the result that almost every inquirer has found a new theory for himself, each of which was identified with the idea preconceived before he even commenced to study the subject, a circumstance that demonstrates how desirable it is that two or more minds should investigate a subject which it is important should be set at rest for the benefit of sound curative treatment. That caries of the teeth is one of these is certain, and the researches of Underwood and Milles are doing much to demonstrate one active condition of the disease, but it appears as yet that the *fons et origo* which induces a nidus for the growth of bacteria has still to be shown.

The pathological conditions of the mouth required enlarged enquiry and extended investigation that would lead to great beneficial results if they were taken up collectively by committees appointed officially by the Association. The reports of which being produced at our Annual Meetings would lead to a discussion of far more value and importance than that producible from the records of singular and unique cases that, however remarkable they may be, can only demonstrate the possibility of conditions, rather than lead to any valuable advancement in the present state of our knowledge.

There is another subject to which I should like to draw attention, and that relates to the political, rather than to the scientific value of the Association. I mean the desirability of making the professional qualifications of an uniform standard throughout the united kingdom.

All feeling of rivalry in this direction should as far as possible be reduced to a minimum. It is distressing and injurious to the status of the profession at large, that a man who passed his examination in one locality should be considered as being of a better or higher standard than he who had passed it at another recognized centre. The feeling that I am of Paul, and I of Apollos must be detrimental to the *esprit de corps* of any profession. I know that the recent Medical Bill was intended to accomplish something of the kind for the medical profession at large, but surely it is within the power of the council of our Association to arrange something of the kind for the dental profession in the future.

This I should think might be nearly approached by a common arrangement between the examining boards of the several centres, by having the examination uniform in time, and similar in kind; and above all things it is desirable that a high minimum standard should be obtained, and this, I think, can only be secured by having a thorough and searching examination, instead of a short test enquiry that ranges over one or two subjects. I hope the making of these several suggestions, which the position I have the honour to hold enables me to do, will not be thought officious on my part, as I feel assured that all members of the Association, both in and out of the Council, are most desirous to do their utmost to raise and elevate the profession to its highest position in the judgment of the public; and this will best be attained by an uniform standard of excellence that the members of the profession must respect among themselves.

I can only repeat the great regret I feel that I shall not be with you on the occasion of your meeting in a town which I never visited without leaving it with regret, and with a desire to return.

ADDRESS DELIVERED BEFORE THE REPRESENTATIVE BOARD OF THE BRITISH DENTAL ASSOCIATION AT EDINBURGH.

By John Tomes, F.R.S.

At this the Annual Meeting of the Board it may reasonably be expected that something should be said by the President upon the very lately-withdrawn Medical Bill, the dental section of which was of advantageous importance to us. One result of its passing would have been the repeal of a provision introduced in the Dentists' Act by the Government for the time being, rendering the consent of the Medical Council a necessary antecedent to a prosecution under Section 4 of the Act. The question of the repeal was considered by the Medical Council when the Medical Bill was, in 1883, under its notice, and a suggested dissent, after discussion, failed to secure a proposer. The consent of the Council is, no doubt, an impediment to prompt action, but considered with reference to the initial registration of the members of a calling in the widely varied conditions prevailing when the Dentists' Act was passed, the impediment offered may, with some show of justice, be regarded rather as a useful hindrance to precipitate action, than as a fatal obstruction to the due operation of the Act.

The further clauses relate to bringing the Dentists' Act into accordance with the Medical Bill in obedience to the provisions in the Act for securing its conformity with any Medical Bill which might in future become law. Indeed, the Dentists' Act may, to some extent, be considered as part and parcel of the Medical Bill of 1878, of which the Bill of 1884 is the direct descendant.

Exception has lately been taken to the wording of certain provisions of our Act in extenuation of a much questioned registration, the conditions of which cannot recur, and hence the details of which need not be at this time, if at any time, brought into prominence. There may have been faults in the drafting of the Act, but our legal advisers have not yet learned how to draw provisions whose administrations shall be satisfactory to their promoters when opponents to the measure are found amongst the members of the administrative body. The value of legal opinions upon the interpretations of provisions, depends upon the object sought by those who draw the submitted case; whether mere *bona fide* guidance in administration to be yet entered upon, or extenuation for action already taken or desired to be taken is sought, whether guidance or justification, for on this depends whether the opinion should be read as a plea or as a judgment.

The question of direct representation so much agitated for by medical practitioners, and in the Bill to some extent conseded, was, as respects dental practitioners, brought before the Royal Commission, and considered with a result that, taking into account the very recent legal recognition of the dental profession as such, might have been foreseen. Our claim has been placed on record in a Blue-book, and may be taken up with effect when the majority of those in the Register have subscribed to the educational provisions of the Act. In the meantime, the Licentiates have a representation in the Council, in the representative of the College from which they have received the licences, and to which they owe allegiance. This fact requires full recognition on the part of the Association, the business of which should be to place itself in intimate relations with those who may justly be accounted to be their representatives on the Medical Council, and who should, therefore, be fully informed respecting those wants and necessities, educational or otherwise, for which provision is made in the Dentists' Act. While as the decision of the Royal Commission would indicate, the Licentiates are, for the present, sufficiently represented, those who hold no registrable educational qualification, are not unrepresented. For the Council, by the act of placing their names upon the Register, are rendered responsible for their interests as provided by the Act. Furthermore the representatives in advancing or protecting the interests of the Licentiates of their respective Colleges, in so doing will further the cause of the profession generally and preserve the many advantages the Act has given to all alike. We may amongst ourselves make divisions on justifiable grounds, but Society will regard the profession as a whole, and legislate for it as a whole, estimating the individual member in accordance with his merits as made known by personal acquaintance or general reputation. These facts are but matters of common knowledge, yet they may be forgotten, and the oversight might result in action, on the part of the Association, of a narrow and partial, in the place of a general and impartial character.

We might unwisely put forward claims to which our position does not give us a sustainable title, and give colourable grounds for a prejudice against our branch of the medical profession, and make enemies where we should secure friends. Where a large number of persons are concerned, some may be found whose desires outweigh their principles, and with whom the plea of necessity will be put forward in excuse for greed, in the pursuit of which professional usage will be outraged. Legislation will not, indeed, could not afford a remedy for this evil, but education and association will tend to its diminution, and the increasing prosperity of our dental schools, brought into action by legislation, bids us hope that a professional nuisance which never can be wholly removed, will be brought into much narrower limits and its practice confined to the few meaner spirits whose presence in our ranks may be regretted but cannot be prevented. In the Church and in the Law persons are found of every shade of darkness down to the very blackest of sheep, and our branch of the medical profession cannot claim exemption to what seems to be a general rule.

I believe I am right in saying that nothing whatever is known of the future of the now wholly dead Medical Bill of 1884. Whether its spirit will rise next session embodied in the old words, or whether it will take life in a new form, no one seems to know. But we are told that it died by the hands of its enemies, the "*interests*" whose assent could not be obtained; and it is not likely they will welcome next year a measure in the image of one they have with much trouble just sent to its last account. To those who for the best part of a generation now nearing its end, have interested themselves in the progress in knowledge and in utility of our profession, it would have been a great gratification had medical legislation been determined during the past Parliamentary Session, and thus allowed a permanence of favourable conditions, a state of peace and progress undisturbed by threatened change for a quarter of a century to come.

Those who live on may see, and I will venture to predict will see that, happen what may, our Act, if rightly used by ourselves, is sufficient, and that the proposed amendments, though desirable, are of relatively small account as respects the general results. No fault has been found with the strictly educational clauses or with the manner in which effect has been given to them by the Medical Council, and therein lies the strength of our social and professional position. If full force be given to these we may regard lightly the mere prohibitory sections of the Act. Education is the highest form of protection; this secured, its possessor may defy the charlatan who many contend should be put down by the strong hand of the law. If we wait for penal enactments to procure the desired result, neither this nor the succeeding generation will see its fulfilment. The government steadily refuse to make the act of medical practice by unqualified and unregistered persons penal. The most that can be obtained is the prevention of their use of their title of the qualified, their establishment of a claim for pecuniary renumeration for attendance, or their appointment to any medical office whatever. And with this the medical profession and its dental branch must be content.

I regret that no choice is left to me, that in the observance of common prudence I must express in written words matters upon which I should have preferred to have spoken. The time comes to all when long journeys and the evening hours usually devoted to social intercourse can be enjoyed no longer in safety. To some this time comes early, to others late. That the period has arrived when my hold of life requires the strict observance of my excuse for an unwilling absence from this year's meeting, held as it is in the great northern capital, where on a well remembered occasion I received so hearty a welcome and so much personal kindness from my professional friends and acquaintances.

THE MAINTENANCE OF HEALTH AMONGST THE PRACTITIONERS OF DENTAL SURGERY.*

By Oakley Coles.

(*Concluded from page 780.*)

What a change has taken place during the last twenty-five years! How much more our patients expect at our hands, and, happily, how much more we are able to do for them! Think of the laborious character of some of the operations of the present day, and think also of the relative rapidity with which they can be performed. The burring engine and the electric mallet are doubtless wonderful labour-saving machines but are they such brain-saving machines? If we can do now in one hour, work that formerly took three hours, and we see now three patients when formerly we should only have seen one, is the gain in time an unmixed good? Are we not, by economising labour, and thus seeing more patients in a given period, keeping up the same distance and enormously increasing the pace, and is it not the pace that kills?

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* A paper read before the Odontological Society of Great Britain.

I know there is a fascination about some of our work in the present day that, even when we are jaded and sickly, keeps us at it, and it seems as if "the labour we delight in physics pain," but is it always the right drug to use?

We are practising a section of general medicine at the present time under conditions that no other branch of our profession is subjected to; we are doing all our work in one room under most unfavourable hygienic surroundings, and for at least three hours longer than the busiest physician or surgeon devotes to his profession in his own consulting room, either in London or the provinces. We have no change of scene from one patient's house to another, no intervening carriage drive when the lungs may be filled with fresh air, and the tired limbs are in a state of temporary repose,

We have not simply to listen at our tables, quietly sitting down, to a long list of complaints and analyse a chain of symtoms: we have in nearly every case to undergo a definite and often considerable amount of muscular as well as mental exertion, and we have to do this, under the circumstances that I have already described, for double the time that the ordinary consultant devotes to his home practice.

Is it wonderful that some of us break down prematurely? Is it strange that when we have finished our work and dined without appetite, we are glad to go to bed, only to sleep without refreshment?

It would be too painful, though it might be sadly useful, if we could give out the names of those whom we have seen during the last twenty years fail utterly in health and enterprise. Most of us can recollect men who are dead and gone, simply from over-work, whilst we can call to mind the familiar faces of those who have had to stand aside out of the race of professional life, and feel that their part in it has been taken by some one else.

In all earnestness I would ask, is our policy of hard work and long hours a wise one?

Granted that you may grow rich early in life, and then rest; but will it be the rest that gives any capability for enjoyment, or a very wearyness of the flesh, in which pleasure shall seem but as dead sea fruit?

Some of us can stand the strain for a longer time than others, but very few can stand it for an ordinary professional lifetime. Failing sight, impaired digestion, or some organic change, tell their own tale to ourselves, if not to our friends.

Beyond all this, is it just that our entire energies should be used up in the way of merely living and making money? Surely we may clain some time for the enjoyment of "the sweet humanities of life and culture."

The higher standard of education, general and professional, to which we have attained has primarily increased our usefulness to the commonwealth that we are prepared to loyally serve, but it has enlarged our capabilities in other directions as well, and it may often happen that a man's best work will be done outside the round of his usual avocation; yet, as things are, how little time many of us have for this larger and sometimes higher sphere of labour. We must face this problem. It is the very curse of specialism that a man's views become as "cribbed, cabined, and confined" as the area in which he may practise his most beneficent department of medicine. Other interests, other pursuits—nay, if you will, a fresh set of worries, but a time of change, relaxation, and excursion into pastures new we all require. And I do not see how we are to get them if we work till we are worn out with fatigue, or have so utterly failed to maintain our health as to have lost all capacity for any form of usefulness or enjoyment.

Outdoor exercise, fencing, and athletics will doubtless do a large amount of good, but my case is that, as we work now, most of us are too tired out to find relaxation in such pursuits. To shorten our hours would doubtless involve many changes in our present arrangements, but scarcely so great a change as an utter breakdown in health would necessitate; whilst by improving our physical condition it would at the same time increase our capabilities of usefulness to our patients.

It may be thought that the discussion of this subject lies outside the domain of this Society, but it seems to me that a body that devotes itself to the progress of dental surgery may wisely, as well as fairly, discuss the hygienic conditions essential for its members.

TREATMENT OF RIGGS' DISEASE.—The following formula is suggested by Dr. Boedecker: ℞. Tartrate of chinoline; Iodo chloride of zinc; (to an ounce of water add forty grains of chloride of zinc). This is the formula as quoted by the Southend Dental Journal.

CLINICAL STUDIES ON THE COMPLICATIONS OF DENTITION.

By Dr. Magitot.

(Continued from page 785.)

COMPLICATIONS OF THE THIRD PERIOD OF DENTITION.

(DECAY OF TWENTY TEMPORARY TEETH AND THEIR SUBSTITUTION BY AN EQUAL NUMBER OF PERMANENT ONES.)

The physiological fact which produces outwardly the appearance of twenty new teeth substituting themselves in place of the decayed dentition is at the time very important and very complex. It occupies a period extending from the seventh to the twelfth year. We will not study it here from the normal point of view. This study has been prosecuted elsewhere, here it would carry us too far. We will consider only the succession or events in the light of the complications of which they may be the origin.

The complications will here be purely and exclusively local; but let us hasten to add that they are at the same time very varied and highly important to know. And in the first place, if the number of the new teeth, which succeed the anterior teeth, be identical with them, it is not by any means the same in regard to their volume which is much more considerable; for the dimensions of an incisor for example, are, when compared, the one dentition with another, in the approximate ratio of 1 to 3. It follows from this, that the substitution of a decayed incisor by the next, involves, if it be done normally, a corresponding increase in the alveolar arch; and it is indeed at this moment that the anterior and lateral regions of the jaws, till then fixed and immoveable, undergo in their turn a necessary lengthening. There is not always a constant co-relation between the two phenomena, and it is here that pathogenesis places the diverse deviations of direction and disposition of the permanent teeth. If the maxillary is developed insufficiently, the new teeth experience certain anomalies of situation. This is a common case. If the bony development is, on the contrary, more marked, the new teeth remain apart, a space between each, which is an inconvenience, but of a less serious nature than the preceding.

These different considerations relative to the reciprocal agreements between the evolution of teeth and the development of the maxillary have at a certain epoch, much occupied authors and there was produced a very spirited Polemic upon this subject at the commencement of this century. Thus, on the part of Miel, Fox and Duval striving, after the example of Hunter, to demonstrate that the only region of the maxilla which enlarges at the moment of the eruption of the second teeth, is the posterior portion situated on the other side of the temporary teeth, in such a manner that the space occupied by the last, was always sufficient to lodge those which replaced them. These authors, more especially Miel, then gave themselves up to mathematical calculations, destined to demonstrate that the length of the alveolar segment occupied by the milk teeth remain identical after the completion of their successors. The disproportion of volume between the first and second, will be only in appearance, for if the incisors and the permanent canines are stronger than the anteriors, the pre-molar teeth are infinitely smaller than the molars of the infant.

Serres, on his side, started, a few years ago, a doctrine altogether opposed to that of Hunter and of his successors, whose opinion he declares to be absolutely contrary to physiological laws and observation. His very exact and comprehensive researches are based upon the examination of a great number of pieces collected at different stages of evolution. He fixes thus several points of mark: the invariable position of the mental foramen, the opening of the dental canal, the tardy appearance of the swelling of the superior maxillary, the opening of the angle of the inferior jaw and its variations according to age, the development of the maxillary. He endeavours to show that the increase of the jaw is in the physiological state altogether corollary with the dental evolution. Modern researches have done much to confirm these first observations and it is thus that to resume these remarks, we may consider in the development of the jaws five successive periods altogether linked with phases in the eruption of the dental apparatus.

1° In the first phase, the embryonic phase, the maxillary makes its first appearance after that of the dental follicles is rigorously subordinated in its genesis and disposition to the first follicular series.

2° In the second phase, the infantile phase, the dimension of the alveolar arch fixed at the level of the temporary teeth, increases from behind, in virtue of the first permanent molars.

3° In its third phase, the maxillary undergoes a development corresponding to the total volume of the twenty permanent teeth which succeed the twenty milk teeth, and as soon as the replacing is realised recovers its first stability.

4° In the fourth and fifth phases it increases afresh in the posterior portions to assist the placing of the second and third molars. This appropriation of the jaws to the diverse dispositions of the dental system is then constant; it is the physiological law.

(To be continued.)

BENEVOLENT FUND OF THE BRITISH DENTAL ASSOCIATION.

The following is the report presented by the Committee to the general meeting of Subscribers to the Fund which was held at Edinburgh, on Friday, the 29th ult.

THE REPORT OF THE COMMITTEE OF MANAGEMENT.

THE financial statement presented by the Hon. Treasurer will be found to extend from January 1st, 1884, to June 30th, 1884.

The report of your Committee extends from the last Annual Meeting of the British Dental Association, held at Plymouth, in August, 1883, to the present time. In future, it will no doubt be found possible to make the two reports coincident in regard to time.

In accordance with the resolution of the General Meeting, the officers of the Fund were duly elected, and the Committee of Management thus constituted nominated Sir Edwin Saunders, Mr. James Parkinson (London), and Mr. Richard Rogers (Cheltenham), Trustees; their appointment by the Committee of Management will be submitted to the meeting of Subscribers to the Fund for confirmation. At the same meeting of the Committee Mr. A. J. Woodhouse was elected Hon Treasurer, Mr. Dennant Vice-Chairman, and Mr. Oakley Coles Hon. Secretary.

Your Committee were enabled by the kindness and generous help of Messrs. Ash, to issue appeals to seven thousand dental practitioners.

Your Hon. Treasurer has received answers and contributions from two hundred members of the profession.

With the funds placed at their disposal your Committee have undertaken to provide for the maintenance and education of four orphans—two girls and two boys—and they have supplied funds to aid in the election of others to suitable institutions. Three widows are being assisted in such a way as to enable them to earn their own living. Other cases are being so dealt with as to render an aid, which shall be a stimulus to exertion, rather than a premium to lazy dependence.

None of those whom your Committee have helped hitherto have been connected in any way with the British Dental Association. It is well that this fact should be prominently put forward to show that no narrow prejudice or cliqueism has influenced the almoners of your bounty. In the rules that will be submitted to you for amendment, the catholicity of the work of the Fund is made as distinct as possible, so that those who have hitherto found an excuse for withholding their help on account of the presumed narrowness of our aims, may find that such an excuse exists neither in form nor reality. Your Committee have, in fact, framed the amended Rules in such a way that none can be excluded from the benefits of the Fund but those who are either unregistered assistants or practitioners. Beyond such a limitation as registration affords your Committee feel that neither sense nor sentiment should require them to go.

It will be necessary to appoint three Auditors according to the Rules, and they will be called upon to examine and vouch for the accounts, December 30th, 1884, and June 30th, 1885.

In consequence of no Auditors having been elected last year at Plymouth, it is impossible for your Hon. Treasurer to do more than present an "*interim*" financial statement.

This, with a list of contributions up to August 9th this year, will be delivered at the end of the Report.

Your Committee have already alluded to the fact that appeals have been sent to over 7,000 practitioners, and that in response they have received contributions from only 200—from the same 200 who have supported every public movement of the profession during the last twenty-five years, and not from that larger number—the 6,800—persons who have benefited in every way by recent political, scientific and social progress.

Your Committee are anxious to elicit a definite opinion as to whether they may regard these facts as an indication of thoughtless indifference or well matured selfishness.

Your Committee have shown ample proof of the necessity for this fund, by the recital of cases that have come under their notice in little more than six months. It will also be manifest that the present rate of income will prove totally inadequate to the probable expenditure.

Your Committee are most solicitous to know whether a body of men who claim to belong to a liberal and learned profession will allow the widows of their deceased brethren to remain in want and their children to grow up in ignorance.

Your Committee would rather look hopefully to the future, trusting that the cause and their desire to administer the Fund in a broad and catholic spirit, in the direction of promoting self-help and independence among the recipients of the charity, will awaken the sympathy and support of all classes of the profession, particularly of that large section who have not hitherto seen it to be their duty to join the British Dental Association, but who have nevertheless been the first to receive the benefits of its Benevolent Fund.

JOHN TOMES, *Chairman.*

[To this report is appended a detailed balance sheet.
Ed. B. J. D. S.]

British Journal of Dental Science.

LONDON, SEPTEMBER 15, 1884.

ANNUAL ADDRESS TO STUDENTS.

Each year we are wont to devote some space in our Students' number to an address to Students. An address valedictory to those who for the first time enter in earnest upon the career of dental medicine and dental surgery; an address admonitory to our old friends the Students, no longer novices, although not as yet qualified practitioners.

To all we offer a hearty well-wish for the on-coming year, a well-wish for health, and work and power of working.

There are topics not a few from which to select, topics alike pertinent to the beginner of student life and the beginner of professional life. For our purpose we would ask ourselves, why should we be dentists? and how can success be obtained in that walk of life. Superfluous it may seem to answer the first query, since the step is taken, the irrevocable die is cast. But it is not so. Many men since Narcissus, fabled of old, have gazed upon a shadow to the detriment of the reality, have died to the fact of success through love of a mere reflection. Unless a Student will recognise the practical side of this question and grasp it rather than gloat over an ideal he will fail. Prosperity, social pleasures and name and fame are within the reach of the Student if he will go about his business in the right way. As in all callings and professions, so in Dentistry, that man succeeds in the long run who is worthy of success. Let no one cover himself in the mock-modesty cloak of lack of genius. Genius is so rare that men need trouble themselves about it but little. The genius, in common parlance, is the man who is successful. The man who earns the title was haply the dunce at school, the "slow apprentice," but he was resolute of will and of undeviating perseverance. Success means steady day to day work, wisely directed and *done with an aim*, with a clearly defined object. The coruscations of the youth who fancies he possesses a genius, are a sorry substitute for constancy of purpose and intelligence in execution. The Student has to ask himself what are his aims and what are his means. To the ambitious there are laurels to be gained, but they come only after long years of patient toil much expenditure of time, money and brain work. There are such laurels and there is guerdon of wealth to the worker, but failure and disgrace to the dilettante and the idler. Each year keener grows the contest, more are the competitors and higher grows the standard at the examination boards. The whole tone of the profession depends upon the zeal and industry of the Students, and it is only natural that those who guard the inlets of the professions should jealously scan the attainments of the candidates who present themselves for the pass.

The profession is certainly more precise in its methods, more scientific in its aims, than a few years back, but there is danger even in this, at least to the student. Let him beware how he neglects the work room and the surgery for the sake of his study and his books. Let him remember that books are but sign-posts, which should direct his practice, as 'ends' they are useless, harmful to a degree. Theory must follow practice, when the eye and the hand have learned to work in accord, then may the rival faction of theorists claim attention, call for a closer study. It is not our intention to dictate to the student where and how he shall learn his work, there are ample opportunities in our pages for him to learn where and how he *can* gain instruction. With him and his friends must rest the choice. So long as he does his work well, it becomes of secondary import in what locality he takes his abode. Of course the student who sees the largest number of cases possesses vast advantages, if he uses his opportunities. But sooner or later he will find that what he learns he must teach himself, lecturers and tutors may guide, they cannot *make* a student learn.

But now a word about play. The average student of all professions makes a great blunder about his playing. He either plays too much or too little or he plays badly. It is almost as important for after success in life that a student should play well, as that he should work well. Every game of skill becomes a source of the most useful training for eye and hand. Unhealthy play, excesses, moping indoors fail to *re-create* the used up faculties, the tired brain, the relaxed muscle. Every day should be mapped out with its due quantum of work, and outdoor exercise.

No brain will do good work, no hands will learn agility and delicacy and precision of touch, unless the body is healthy, the muscles close-knit and vigorous.

One often hears from students that they cannot see the use of preliminary studies—an examination in acts, the old-fashioned "humanities" is to them a remnant of barbarism.

A few years of life in their profession opens their eyes to a sad awakening. As was well said in an annual address of a branch of the British Dental Association, the student who comes to his calling without some knowledge of Latin and Greek must be hopelessly non-plussed at his initial plunge into his books. To him the nomenclature is Greek indeed.

But in the present day, no student if he is to take rank as an intelligent worker can afford to be ignorant of physics and chemistry, nor can he afford to be without, at all events, a knowledge of elementary electricity. These subjects piece in to his every-day work, and make his practice rational, not empirical.

Again, microscopy, has assumed for the dental student a place of prime importance. Much patient toil must, however, be undergone before the manipulative skill can be acquired, which is essential to enable the student to employ it profitably. One could hardly compress within our limits the words of proof, which some seem to need, proof that the so-called by-subjects are not mere tasks imposed upon the unwilling student by the eccentric malice of a court of examiners. It is sterling fact that the man who commences the study of technical dentistry after having thoroughly mastered the subjects of the preliminary, has a solid foundation which must prove invaluable to him in his after career.

And one more word. With passing time, men must change. The career of social duties of the dentists have undergone a transmutation of the most thorough kind within the ken of this generation. To adapt himself for a successful life, the dental student, has nowadays to cultivate the refinement and general tone which characterises the gentle classes of life's big game; let him take well to heart that his aptitude for such social training will largely determine the grade of society in which his practice will drift and so will environ him with the rewards of life, or plunge him into the ranks of the social failures, the Micawbers whose chief pabulum is the contemplation of their own "ill luck."

Preliminary Education in America.—We learn from an American contemporary that the University of Michigan has referred ten applicants for matriculation on account of their lack of knowledge of English. This is distinctly "a move in the right direction." It will prove very interesting were the other Universities to furnish statistics as to the number of candidates they "referred."

Immense Efforts are being made to insure a wider and more thorough preliminary training in America. The journals are simply teeming with lectures on the "higher education of dentists." We only hope the agitation will not prove a "much cry and no wool" fiasco, but glibness of tongue does not always insure thoroughness of thought or even earnestness of purpose.

Machine for Tooth-Pulling.—At first sight the machine looks like a set of paper rolls used in the manufacture of paper. At the entrance is a comfortable seat much like a reclining chair, wherein the patient is seated and firmly bound. His mouth is propped open by an ingenious contrivance, and his head laid on one side according as the defective tooth is situated. The machine is one of very intricate and beautiful construction. The tooth is first pulled with lightning celerity, caused by the revolution of a wheel making 781 revolutions per minute. The chair with the patient is then whirled along, and another ingenious arrangement divests him of his clothing and gives him a Turkish bath, also a shave, hair cut and shampoo, while at the same time his linen is marked with indelible ink, washed, ironed, folded and done up in a neat brown paper package; his garments are sponged, his boots are blacked, finger and toe nails cut and nose wiped, and the happy man is flung out at the rear, passing through a shower of rose water and bay rum, alighting on a pile of cushions, where he finds a coloured man waiting to help him to dress, and to ask him what'll he have to drink. The great objection to this is that being a labour-saving machine, it will throw a large number out of employmont. This same objection was urged against the sewing machine and the self-binding reaper. It will have a tendency at any rate, to make good machinists and stationary engineers out of what would otherwise, perhaps, be but indifferent tooth-butchers.—Need we say with Artemus Ward "N.B.—This is a goak," we trust our readers will remember that the Chicago Inter-Ocean, which we are quoting is a paper of unimpeachable veracity. Happy the editor who can command such "smart" writers.

Substitute for Gutta Percha.—A German chemist has we are informed, taken out a patent for the manufacture of a material which answers all the purposes of gutta-percha. This material consists of gum copal and sulphur mixed with double their bulk of oil of turpentine or petroleum. This is well heated and thoroughly stirred. The mass is then cooled and casein dissolved in weak liquor ammoniæ is added to it. The next step consists in again heating and then boiling in a solution of nutgalls or catechu. It is necessary to boil for some time, after which the mass is cooled, washed in cold water, kneaded in hot water, rolled out and finally dried.

An Easy Method of Re-fitting Rubber Plates.—*The Dental Luminary* says:—Often, plates become loose after being worn, and to a certain extent unsatisfactory and even useless. If the teeth are antagonized and plate perfect, having been a satisfactory fit until absorption continued and the plate became too loose to remain serviceable, explain to the patient that a new plate can be made for half the usual price by using the same teeth, etc. This being understood and arranged, drill, with a bur attached to a dental engine, a number of slots, and under cut holes at different points on the gum surface of the plate—to hold the plaster in; mix plaster rather thin, pour into plate and insert quickly into the mouth, pressing it well up on the gum—we are illustrating with an upper plate—letting patient bring mouth together to get a perfect antagonism. As soon as the plaster sets remove the plate carefully from the mouth, observing that the impression is perfect, etc. Being satisfied as to this point, pour some plaster into the lower section of the flask and press the plate and teeth into it, and press the plaster well around the teeth up to the top of the rubber above the gum of the teeth, sloping off to the edge of the rim of the flask; next varnish and oil the plaster and impression and pour plaster in, filling up the impression and flask. It will be better to let the plaster harden a day or night before separating. Allowing sufficient time for this, put the flask into the vulcanizer and steam up for fifteen or twenty minutes, until steam escapes quite lively; then separate flask rapidly, but carefully. If properly managed, the plaster impression and old rubber will both pull away from the pins on the plate, leaving the case just as it would be for packing rubber in the usual way of making a set of teeth. From this point it only remains to pack rubber, vulcanize, finish and insert in the mouth as usual. The result, if properly manipulated, will prove altogether as satisfactory as a new plate. We claim no originality for this method, only present it, that some one who has never tried it may find occasion to do so.

PREPARATION OF NITROUS OXIDE GAS.—In the *Scientific American* the following account is given of the preparation of nitrous oxide. Nitrate of ammonium is first carefully heated in a glass retort until it melts, which takes place at a temperature of 329° Fahr. The temperature is then again slowly raised until a heat of 365° Fahr. is reached. At this point, the salt splits into nitrous oxide gas (N^{O}_{2}) and water (H^{O}_{2}). The gas is then passed into a gallon bottle, which is provided with an outlet tube leading to the gasometer. This bottle is to be filled one third full of ferrous sulphate (copperas) and an ounce of strong sulphuric acid added to it. The tube connected with the retort should dip an inch below the surface of this liquid. The gas thus washed may be passed into the gasometer and is ready for use after some hours. The joints must of course be very fixed and free from leakage.

SAVING A SPLIT TOOTH.—Dr. Francis, an American dentist records the following case:—Last spring a gentleman called at the office, stating that there was pain in an inferior molar tooth. I made an examination and found it quite sound. Upon pressing it I noticed the tooth had been split through the centre, and of course it moved a little and opened when he bit and gave him pain. The pulp was alive, and the tooth in all respects healthy except that fissure or crack. It was a very valuable tooth and I finally decided I would cap it. I cut away the grinding surface a little and took an impression of it. I had a gold crown made like a thimble to fit the tooth and that would extend to the margin of the gum and fit the neck. It was fitted, I might say, perfectly. After having properly arranged it I filled the crown with a thin coating of oxy-phosphate of zinc, forcing it down. This was nearly a year ago. The tooth has given no trouble since.

SALICYLIC ACID A CURE FOR TIC DOULOUREUX.—Salicylic acid has enjoyed for some time a high repute for many and especially antiseptic purposes. It is also a useful anteperiodic and cure for malarial disorders. The *Medical and Surgical Reporter* recently vaunts its use in tic douloureux:—"We frequently meet in our practice cases of tic douloureux, that often so exceedingly painful neuralgia of the fifth nerve, where an operation seems to promise the only radical cure. If we hear of a remedy which is said to have the same effect as the surgical interference, we become doubtful; but if no less reliable an authority than Prof. Nussbaum (*Munich, Aerztl. Intelligzbl., 38, 1883*), assures us of the fact, our hope increases. Recently a number of such cases had been sent to Nussbaum for the purpose of having the operation performed, and, after a number of carefully instituted experiments, this great surgeon recommended a trial with salicylic acid before proceeding to stretching or to resection of the nerve. In all the recently sent cases he first tried this remedy, and he found it in every one a radical cure; not only a palliative effect, but really an utter disappearance of the painful disease was the result in every case. Especially in cases of rheumatic nature, Nussbaum is positive of having discovered in salicylic acid a specific for tic douloureux. He administered the drug in the following manner: ℞. Acidi salicylici, 0.2, gr.3⅓; Sodii salicylatis, 2.0, gr. 32; M. ft. pulv. Within 24 hours the patient takes from four to six of such powders.

To HARDEN A PLASTER MODEL.—"Items of Interest" tells us this can be effectually achieved by allowing the model to dry and then immersing it in thin glue; the common carpenter's glue is said to answer well.

SALIVARY FISTULÆ AND HOW TO TREAT THEM.—A French surgeon, M. Richelot, has found the following procedure efficacious in these troublesome cases. The thickness of the cheek is tied by an elastic ligature, this gradually causes an internal opening to the fistula to take place and when this end has been attained, it is found that the external opening closes rapidly, while the internal aperture shows no inclination to contract.

THE WAY THE DENTAL BENEVOLENT FUND DOES ITS BUSINESS.

The following are typical cases relieved by the Benevolent Fund of the British Dental Association during the last six months:—

No. 1.—A dentist who has broken down in health, with a paralysed wife and no means of support, unable to work at his profession. Must be a permanent charge upon the fund in all probability.

No. 2.—A widow without any means of support, has been helped to commence business for herself, and there is every prospect of her succeeding.

Nos, 3, 4, 5.—A widow with seven children and no means whatever. Two of the children are being educated and provided for at orphan schools, and the widow being trained in an occupation that will enable her to support some of her other children.

No. 6.—The daughter of a deceased dental surgeon is being provided with board, lodging, and education at the expense of the fund with a view to her receiving such training as will enable her to earn her own living.

No. 7.—The widow of a dentist is being helped to maintain a home for her children by a grant being made towards the payment of the rent of her house, part of which she endeavours to let in order to make a small income.

No. 8.—The widow of a deceased dental surgeon has been helped by a money grant to secure the election of one of her children into a suitable school.

Cremation of a Surgeon.—Dr. Grose the well-known surgeon who died recently had elected that his body should be cremated; this last right was accordingly performed.

New composition for Casts.—Mr. Charles W. Cathcart, in the *Edinburgh Clinical and Pathological Journal*, has an article on the use of a composition as follows :—Strong, clear glue or gelatine, 4 ozs.; glycerine, 4 ozs.; water, 1oz.; He breaks the glue into small pieces, soaks for an hour in cold water, melts, and adds to the warm glycerine. When thoroughly mixed, this substance can be poured into any mould, and when cool it is quite tough and elastic. Its clear, brownish colour is an objection which is overcome by oxide ot zinc, one ℔.; glycerine, ½ ℔.; glue, one oz.; mix the glycerine and oxide of zinc, and add the glue melted. For a flesh tint, add solution of burnt sienna rubbed up in glycerine, or of vermilion in glycerine. This material cuts with something like the consistence oi skin, is elastic, and is tough enough to hold stiches. It may be used to illustrate certain plastic operations, such as hare-lip. In making casts it is not necessary to prepare the plaster mould, other than to see that it is perfectly dry. When cold, it may be *pulled* out without fear. The cost per pound is from 1s. 6d. to 2s., and the specimens keep well.

Manipulative Miscellany.

All instructions or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later tnan the 8th and 23rd bf each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to put one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

HOT AIR AS A MOTIVE POWER FOR THE BURRING ENGINE.

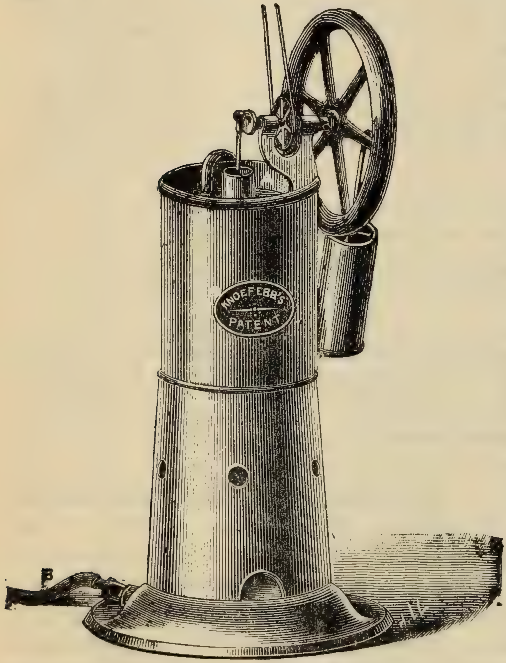
(KNOEFERL'S PATENT.)

Mr. Joshua Ritchie has a most iugenious and novel hot air engine of quarter man power, which for safety, efficiency, economy and simplitcity leaves little or nothing to be desired; for "light work," such as dental needs require. What may be its capacity for heavier work, experience with larger machines alone can prove. The one under notice will drive a heavy sewing machine, lathe, &c. and increase of power seems only to depend on dimensions of engine.

Its chief charms—for such unskilled engineers as most practitioners are—are its utter immunity from danger; no amount of neglect having any practical ill effect upon it. Its requiring no replenishing, watching, or attention whatever, beyond lighting a gas burner five minutes before using and extinguishing the flame when done with, but even should this be forgotten no greater harm would result than a waste of gas.

It is so admirably calculated for driving a burring engine, that Mr. Ritchie is preparing sundry apparatus to adapt it to any make of engine or hand-piece already in use, and we think the advantages to the operater of being able to stand perfectly still whilst preparing a delicate cavity, instead of as at present trying to balance on one foot whilst actively employing the other, are obvious in the extreme.

The engine need not even be in the surgery, as its power can be most readily transmitted by a cord from an adjoining room.



The apparatus is in the form of a cylinder, of about twenty inches high by nine inches diameter, standing on a base of about thirteen inches; on the top of the column at the side is a fly-wheel of about twelve inches diameter, which completes the engine. The cylinder contains two chambers under the lower being a small bunsen burner which keeps it hot for expanding air which is being continually drawn from the upper or condensing chamber and pumped into the lower where it again expands to be again condensed and re-used *ad infinitum.*

Thus, once set in motion, it becomes a quiet, unwearying yet perfectly tractable slave, willing to do our bidding at the cost of about one farthing per hour.

Abstracts of British & Foreign Journals.

THE NEW ENGLAND JOURNAL OF DENTISTRY

AN IMPROVED APPLIANCE IN THE PHYSIOLOGICAL TREATMENT OF CLEFT PALATE.

By Henry A. Baker, D.D.S.

Lesions of the palate arise (1) congenitally; (2) accidentally.

Congenital cleft palate is treated (1) mechanically; (2) surgically. The latter is now almost entirely relinquished (*a*) because it is painful to the patient, is difficult and the result is not always satisfactory; (*b*) because the improvement in the speaking voice is far from satisfactory.

All vocal sounds, save the nasal, are produced only when the soft palate is in close contact with the pharyngeal wall. This cannot obtain when the operation of staphyloraphy is performed because the soft palate is too short to allow of its complete opposition with the pharyngeal wall.

Accidental cleft palate arises (*a*) from accident, *i.e.*, traumatically; (*b*) as a result of disease *e.g.*, syphilis.

This class of cases admits of far better results of treatment than do those of congenital cleft palate. It is accounted for thus: Those who are the subjects of non-congenital cleft palates are those who have learned accurate enunciation, those who have congenital clefts never have enunciated accurately and need careful training.

Appliances to meet these conditions are (*a*) obturators; (*b*) artificial vela. The former is exemplified by Suersen's appliance, the latter by Stearns', Suersen is quoted to the effect that perfect phonation is only achieved when the soft palate can completelyclose the buccalfrom the naso-pharyngeal cul-de-sac. This is effected by the levator and tensor palati and the superior constrictor of the pharynx. The author believes that although this last muscle might in acquired clefts undertake all the necessary muscular action, yet in congenital clefts it could do so, if at all, only after many years; and hence he prefers Stearns' apparatus which utilises the levator palati. Dr. Kingsley says of it, "two principles are vital (1) the artificial velum must embrace the two levatores and that they can lift it and (2) shut it at will, *completely* blocking off the naso-pharynx."

Soft vulcanised rubber for the artificial velum not being permanent is regarded as being bad. The following device is said to prove efficacious. A gold or hard rubber plate covers the hard palate to its union with the soft palate.

From this point an artificial velum extends downwards and backwards. It is attached by means of a hinge. The velum is made of polished hard rubber, gold or platinum and is somewhat chestnut shaped.

The distal end is broad and lies in contact with the pharyngeal wall. The superior constrictor closes round this in a semi-circle. In order to ensure lightness the bulb-shaped velum is hollowed. The method of hollowing is then explained.

Three-fourths of the sounds of articulate speech are dependent upon the integrity of the soft palate, hence a rigid obturator must be objectionable as it can subserve the purposes fulfilled by the natural soft palate. The contrivance which our author employs bridges over the cleft and lies upon the muscles on each side. With all sounds requiring the closure of the nasal cavity it is thrown up by the levatores. The thickness of the obturator enables it to lie contiguous to the superior constrictor and forms a firm resistence to the tongue during the utterance of gutterals. The hinge ensures freedom of movement without permitting of displacement of the plate. The fall of the velum occurs through its own weight.

The writer thus summerises the advantages of his appliances.

(1.) It is made of a permanent material.
(2.) Articulation is learned in its use with facility.
(3.) It is very easy to make.

PERMANGANATE OF POTASH.

By Charles Mayr, A.M.

Disinfection implies, according to the author, a chemical reaction which destroys an offensive substance.

A deodoriser only destroys the smell, but as an odor is the volatilation of a portion of the substance, a deodoriser destroys just so much as is volatile. Mere overwhelming an odor by one more powerful is not deodorising.

Permanganate of Potash destroys the sulphuretted hydrogen and ammonia compounds both simple and alcoholic.

The mode of preparation is thus described: It acts by virtue of its high state of oxidation giving off an atom of oxygen to the substance with which it is brought into contact,

To test the difference between the antiseptic and the deodorising power of certain materials some putrid solutions were taken.

A solution with an acid reaction was treated with permanganate of potash. This at once deodorised and destroyed the organisms. This solution, however, after a week was as bad as ever, stinking and swarming with vibrios.

Another solution was treated with an equal bulk of a solution of white arsenic. Another with equal bulk of a 2 per cent of acetate of lead. The offensive odor was destroyed, although a slight odor remained. No fresh infection occurred.

Another solution was similarly treated with 1 per cent. of percholoride of mercury. This partly deodorised but it is stated that lactic acid ferment microbes manifested themselves after an interval.

The writer believes that a routine employment of corrosive sublimate is most deleterious. He suggests that lead preparations are worthy of trial.

SEPTIC THEORY OF DENTAL CARIES.

By F. Searle, D.D.S., Springfield, Mass.

(Conclued from page 805.)

The theory promulgated by Underwood and Milles should be termed rather the "germ" theory than the "septic theory" of dental caries. Ziegler is quoted to explain the germ theory. Some germs exist when the tissues are healthy and others only when they reach tissues which are the seat of more or less morbid change. The microbes excite changes, they withdraw oxygen, carbon, hydrogen and nitrogen, they decompose albuminoids into peptones et cæt, while sugar becomes lactic acid, lactic acid butyric acid, and alcohol is changed into acetic acid. Fermentation and putrefaction are initiated by fungi or at least occur only when such are present, and are influenced by the amount of fungus present. The presence of bacteria, predisposes to necrosis and degeneration, the extent depends upon the species of bacterium present. Each set of bacteria has a special affinity for a special tissue. This, then we learn is proof that these organisms can and do exist in soft tissues, giving rise to morbid changes by means of their necessities of life.

It remains to demonstrate that soft tissues exist in the teeth. Formerly it was taught that dentine was an homogeneous calcacerous matrix, devoid of cells and tunnelled by minute tubes in which run the fibrils from the pulp, and which endowed the tissue with sensibility. Further, Dr. Miller is quoted as having stated that the lime salts form a definite compound in the teeth, but Dr. Miller cites no authority. It is said that all observers ignore the teachings of Dr. Heitzmann, and the New York School, which go to show that a vital re-action on the part of the bioplasm of the teeth is possible.

Dr. Miller's work is conceded to be over-estimated, and his proofs not to be cogent. It is pointed out that Dr. Miller fails to fulfil his own canons of proof, and while he believes his own experiments even when they are open to serious objection, yet he ignores those of other observers. Further that he ignores the possibility of a vital re-action on the part of the teeth. Speaking of the recent tirade of Mr. Henry Sewill, it is characterised as "full of old beliefs and opinions, based on former views of Histology and a rich spicing of sneers and ridicule aimed at those who believe in the vital re-action of the living matter in dentine." They contain nothing special in the line of new evidence.

The action of thermal changes and of irritants, *e.g.* arsenic et cæt evince the ability dentinal fibres possess to take on an inflammatory action. Dr. Mayr's views then follow.

"The development and progress of caries appear to me to go in the following order:

1st. A congenital defect in the enamel, not only a pit, a fissure, but within this pit or fissure an abnormal, imperfect foundation of enamel and enamel fibrils.

2nd. The remaining of a particle of food in this pit.

3rd. The presence of all kinds of germs in the mouth and their consequent immediate invasion of this remaining particle of food.

4th. The lively fermentation of this particle of food, laying bare by the resulting acids a certain amount of live matter in the enamel.

5th. The final death, from lack of proper circulation, of this weak live matter, and thereby irreparable loss of territory.

6th. The continuing process in this manner of killing the abnormal weak live matter, its consumption by the germs, etc., in the enamel, very often only within a few weak canaliculi, until the dentine is reached.

7th. The spread of the germs in the interzonal spaces by the withdrawal of nutriment from the fibrils of the bioplasm in them, hence starvation and death of the fibrils. They are then appropriated by the germs, at the same time food from without and within undergoing fermentation, as a secondary and remote process acid formation is going on, which dissolves lime-salts; the dead but not yet fermented zone is the intermediate zone.

8th. Entrance into those dental canaliculi which do not contain strong filaments, absorption of their pabulum by the germs, thereby death of the filaments, which are afterwards consumed by the germs; by the advance of the process in the weaker fibrillæ, also the stronger ones become finally weakened and a prey to the enemy; afterwards secondary solution of the lime-salts, etc.

9th. The interruption of the proper circulation in the destroyed canaliculi, absorption of pabulum by the germs, and death of parts of dentinal fibrils, causes the remoter parts to react, hence inflammatory processes in the more remote regions, throwing up of walls of lime-salts to keep the enemy out, pain to cause the patient to seek aid, etc.

10th. If not checked, the inflammation in the pulp reaches a stage where it becomes choked in its own stagnant circulation, death of the pulp, advance of the germs within the pulp cavity, but no dissolving of the tooth without saccharine food, because these germs cannot live on meat alone, at least they don't produce lime disssolving acids.

11th. The tooth is not dead as long as cementum and pericementum are still alive; the enamel remains alive with exception of the invaded spot.

12th. The carious, soft, decalcified old plug in a cavity teaches nothing whatever; it is the decayed corpse killed by disease which has long ago run its course, and which is active on the boundary between the healthy and the friable dentine; this plug is entirely a secondary product which has not as much connection with the process as the scab on a sore has with the sore."

Literary Notices and Selections.

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

By J. William White, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

(*Continued from page 819*).

Syphilitic teeth are frequently affected with caries, and that at a very early age. It is a general law that caries naturally attacks teeth which are imperfectly covered by enamel, commencing at the points least protected, and in consequence most vulnerable. Eroded teeth are exceedingly subject to caries, which frequently invades them at a very early period.* Regarding the first dentition, it is not rare to meet with children who at the age of four years, have their incisors decayed. We have seen the superior incisors already partially decayed as early as the second or third year. In the second dentition a large proportion of the teeth affected with erosion undergo speedy decay. At a slightly more advanced age, it is usual to find certain of these teeth in the condition of shapeless stumps. The first molars are the teeth most exposed to these secondary degenerations. They are early invaded by caries and are often destroyed in youth.

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*See Magitot—op. cit.

There are nevertheless some exceptions to the general rules which we have established. Certain teeth affected by syphilis resist and are preserved for a long time. Let us place in the first rank those which present the variety of erosion designated under the name of the semi-lunar notch. It is common to find even in adult age, Hutchinson's teeth, which, despite encroachments more or less profound of their free edge, remain free from caries. We had lately in our wards a woman of fifty-seven years, certainly an heredo-syphilitic, who still had two healthy lower cuspids, with the manifest remains of a notch in their cusps.

We have now considered the most important and most common manifestations that hereditary syphilis shows upon the dental system. I am certainly far from having exhausted the subject, and a number of interesting peculiarites remain for me to notice. First, a white (milky) stain, which under the form of a linear stripe, runs horizontally over the crown of a tooth—not, as in erosion, a loss of substance, a groove cut in the tooth, but simply a white streak, without irregularity of surface. It is purely and simply a dental zone, differing from its neighbouring parts by its particular coloring which is a dead white, chalky, milky, cutting in sharply upon the normal tint of the tooth. Sometimes, however, it presents a more softened tone—is simply opaline. It is absolutely transverse and regularly horizontal, measuring from a half to one millimeter, and running over the whole surface of the crown from one lateral border to the other. It is a lesion in every respect like that which we call the furrow-like erosion —only it is a streak and not a groove or furrow. Its most frequent seat is the pair of superior central incisors; and, it is a remarkable peculiarity, and significant, that when this white streak affects these two teeth it affects them in an absolutely symmetrical manner, showing itself at the same level of the crown, constituting another analogy with erosion. In a word, the white streak is the counterpart of the dental furrows we have previously studied. We might say that it is a simple variety. Very probably it comes from the same process as that of erosion, with slight secondary differences of anatomical constitution. At any rate we cannot entertain doubts as to its pathogenic relation with hereditary syphilis. I do not pretend—it would be exceeding my experience on this point—that syphilis is the sole cause of its production;* but I declare that it is the origin of it in a number of cases, and that in a very manifest manner. Since my attention was called to these milky streaks, I have met with many of them upon patients certainly affected with hereditary syphilis, and under conditions where it would be impossible to attribute them to any other cause whatsoever. I have been able to recognize, to ferret out—excuse the term—hereditary syphilis, simply by the verification of such streaks. In proof of this is the following case : A few weeks since a young girl, nineteen years of age, came into our wards with a simple *phtheiriasis*, remarkably spread out and profuse as regards eruption. On examining this patient, I chanced to observe—for her complaint was certainly not of a nature to direct my researches in that direction—two superb milky streaks upon the superior central incisors, symmetrical and parallel to the free edges of the teeth. Then, curious to go back, if it were possible, to the origin of this anomaly, I began to search. An examination brought to light in our patient antecedents of the most suspicious kind, viz., numerous and prolonged eruptions during early infancy; very persistent and even serious disease of the eyes, judging alone from the duration; disease of the ears, almost complete deafness, lasting more than a year, etc. Then I summoned to the hospital the mother of the patient, and learned from her : First, that her husband had syphilis and was twice married; second, that he had very probably infected his first wife, who, becoming enceinte three times, had three miscarriages; third, that she herself had received the disease from him shortly after her marriage; fourth, that in 1867, for example, she was treated here by M. Bazin, for "mucous patches and copper-coloured eruption;" fifth, that three years later, she was affected with new symptoms of syphilis in the mouth, etc.; lastly, that, out of six children which she had by her husband, four were dead, three of them almost at birth, etc.

(To be continued.)

Dental News.

BRITISH DENTAL ASSOCIATION.

Friday, August 29th.

MEETING OF THE REPRESENTATIVE BOARD.

The day's proceedings commenced at 9 a.m. with a meeting of the Representative Board. The Vice-president, Mr. J. S.

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*We refer here to the true white streak, such as I have just described, and not to those simple white spots which are so common on the teeth in the form of little round or oval marks, circumscribed, placed at random, etc. These latter carry with them no diagnostic signification and are foreign to our subject.

Turner, occupied the chair, and the following members were present: — Sir Edwin Saunders, Messrs. Jas. Parkinson, Ashley Gibbings, A. J. Woodhouse, S. J. Hutchinson, C. S. Tomes, Henry Sewill, F. Canton, and Dr. Walker; with Messrs. Dennant (Brighton), O'Duffy (Dublin), Manton (Wakefield), Campbell (Dundee), Huxley (Birmingham), Macleod (Edinburgh), Brownlie (Glasgow), Harrison (Sheffield), Sims (Birmingham), Hunt (Yeovil), and Waite (Liverpool).

The minntes of the previous meeting having been read and confirmed, the Hon. Sec. read a letter from Dr. Cunningham, of Cambridge, inviting the Association to hold its next Annual Meeting in that town. After some discussion, it was resolved that the members be recommended to accept the invitation from Cambridge, and that Mr. White, of Norwich, should be nominated as President-elect.

It was also resolved, on the motion of Dr. SMITH, seconded by Sir EDWIN SAUNDERS, that it was advisable to extend the Meeting over three days, and that these should be Thursday, Friday, and Saturday, August 27th, 28th, and 29th, 1885.

This having been read, Sir EDWIN SAUNDERS moved that the thanks of the Board should be given to Mr. Tomes for his valuable address, and expressed the hope that he might yet be spared to enjoy many years of comparative health and enjoyment of life.

Dr. SMITH seconded the resolution, which was carried with applause, and it was also agreed that the address should be read at the ensuing General Meeting.

The Hon. Sec. was requested to write to Messrs. Coleman and Lee Rymer to express the regret of the Board at their retirement.

The following gentlemen were balloted for and elected Members of the Association: viz., Messrs. Daniel Corbett, jun., and A. W. Baker, of Dublin; A. P. Lennox, of Cambridge; F. Boulger, of Norwich; and W. H. B. Neale, of Birmingham; and the following names were received as having been elected by the Scottish Branch:—Messrs. L. Hicks, Edinburgh; Frasse, Greenock; P. S. Walker, Dundee; M. Campbell, Dumbarton; J. A. Gordon, Inverness; and J. J. Andrew, Belfast.

Mr. DENNANT then proposed a vote of thanks to the Chairman for his services during the past year. All knew how valuable had been Mf. Turner's past services in the cause of the Association, and it was evident that he had not yet ceased to labour on its behalf.

This concluded the business.

British Journal of Dental Science.

DENTAL STUDENTS' SUPPLEMENT.

SEPTEMBER 15, 1884.

1. THE LICENSING CORPORATIONS.

COMPARATIVE SUMMARY OF REGULATIONS FOR THE LICENSE IN DENTAL SURGERY.

	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Faculty of Physicians and Surgeons, Glasgow.
1. PRELIMINARY EXAMINATION	Compulsory on all who commenced their Professional Education after July 22nd. 1878	Compulsory on all who commenced their Professional Education after August 1st, 1878	Compulsory on all, except in the case of the modifiedExamination, *vide infra*	Compulsory on all who commenced their Professional Education after August 1st, 1878
2. AGE at which the Candidate may present himself	Twenty-one	Twenty-one	Twenty-one	Twenty-one
3. DURATION OF PROFESSIONAL EDUCATION......	Four years	Four years	Four years	Four years
4. COURSES OF LECTURES, &c., to be attended at a recognised School :				
Anatomy.....................	Two Courses or one Course and twenty Lectures on Head and Neck	One Winter Course	One Course	Two Courses, or one Course and 20 Lectures on Head and Neck

	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Royal College of Surgeons, Glasgow.
4. COURSES OF LECTURES &c. (*continued*)—				
Physiology....................	One Course	One Course of 50 Lectures	One Course	One six months' Course
Surgery	Ditto	One Winter Course	Ditto	Ditto
Medicine......................	Ditto	Ditto	None	Ditto
Chemistry	Ditto	Ditto	One Course	Ditto
Materia Medica	One Course	One three months' Course	Ditto	One three months' Course
Dissections and Demonstrations, or		Nine months	Two Courses	Nine months
Dissections and..............	Nine months	Nine months		
Anatomy of Head and Neck		One Course of 20 Lectures		
Practical Chemistry and Matallurgy	One Course of each	One three months' Course	One Course	One three months' Course
Practice of Surgery, and Clinical Lectures	Two Winter Sessions	One six months' Course, or two three months' Courses	Two Winter Sessions	One years
Dental Anatomy and Physiology	Two Courses	One Course	None	Twenty-four Lectures
Dental Surgery......	Ditto	Ditto	Two Courses	Twenty Lectures
Dental Mechanics	Ditto	Ditto		Twelve Lectures or Demon strations
Practical Instruction in Mechanical Dentistry ...	Three years under a competent Practitioner	Three years under a registered Dental Practitioner	Three years under a Registered Dental Licentiate	Three years under a Registere Practitioner
Practice of Dental Surgery in a recognised Dental hospital, or in the Dental department of a recognised general hospital...	Two years	Two years	Nine months	Two years
5. FEE.........................	£10 10s. over and above stamp duty	£10 10s.	£10 10s.	£10 10s.
6. LEAST period during which unsuccessful Candidates are referred to their studies	Six months	Three months	Six months	Three months

7. PARTICULARS OF EXAMINATION	(A) *Written:* On General Anatomy and Physiology General Pathology and Surgery (both with especial reference to Dental practice) (B) *Oral:* On all the subjects in the Curriculum Preparations, Casts, and Drawings Fillings Cases for Diagnosis, instruments, &c.	*Written and Oral:* First Part — Anatomy, Physiology, Chemistry, and Metallurgy Second Part—Surgery, Medicine, Materia Medica, and special Dental subjects	*Written and Oral:* On all the subjects of the Curriculum Preparations, Microscopes, and other appliances	*Written, Oral, and Practical:* First Part—Anatomy, Physiology, Chemistry, and Metallurgy Second Part—Surgery, Medicine, Materia Medica, and special Dental subjects Practical Examination at a Dental Hospital, Candidates are to bring Excavators, Files, and Plugging Instruments
8. DATE OF EXAMINATION	February, June, and October	First Part—1884 ,, Tuesday, October 16 1885 ,, January 22 ,, ,, March 25 ,, ,, April 15 ,, ,, July 15 Second Part — Following Thursday	October 29th, 1884, and following days	1884—October 14—16 1885—January 20—22 ,, April 23—25 ,, July 7— 9
9. MODIFIED EXAMINATIONS, or EXAMINATIONS *sine curriculo:*				
(*a*) Conditions of eligibility	Candidates must have been in Practice or have commenced Professional Education prior to September, 1879	Candidates must have been in Practice before August 1st. 1878, or apprenticed before August 1st, 1875	Candidates must be registered Dental Practitioners in practice, before 1878	Candidates must be Registered Dental Practitioners in Practice before August, 1878
(*b*) Certificates, &c. required	One of moral character signed by two members of the College or two Licentiates of the Licensing Bodies in the country where the education was received	One of moral and professional character signed by two Registered Medical Practitioners	Certificate of moral and professional character signed by two Registered Medical Practitioners and by two Registered Dentists	Certificate of moral and professional character signed by two Registered Medical Practitioners

	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Royal College of Surgeons, Glasgow.
MODIFIED EXAM. (*contd.*)				
(*b*). Certificates, &c., required (*continued*)	Name Age Professional address Date of commencing Dental practice	Name in full Age Address	Name Age Address	Name Age Address
	Whether a Member, Licentiate or Graduate of any British College of Physicians, College of Surgeons, or University, with date of license, &c. Of what learned societies a Member Whether in Dental practice separately, or if not, in connection with what business	Date of commencing Dental practice or apprenticeship and whether if in practice in conjunction with any other and what business Whether in posseseion of Degree or Diploma in Medicine or Surgery; if so, what and date	Date of commencing practice, and whether such practice has been carried on in conjunction with any other business, and if so with what business Professional status	Date of commencing practice Professional status
	Whether he has employed Advertisements or Public Notices since July 22nd, 1876	Whether practising Dentistry in conjunction with any other business, and if so what		
	Particulars of Professional Education	Particulars of Professional Education	Particulars of Professional Education	Particulars of Professional Education
(*c*) Manner of Examination	Same as ordinary Examination	Same as ordinary Examination		Same as ordinary Examination
Fee			£21	
For further information apply to Secretary	EDWARD TRIMMER, Esq., Royal College of Surgeons, Lincoln's Inn Fields, London, W.C.	JOSEPH BELL, Esq., 20, Melville Street, Edinburgh.	JOHN BRENNEN, Esq., Royal College of Surgeons, Dublin.	ALEX. DUNCAN, Esq., Faculty of Physicians and Surgeons, Glasgow.

II.—PRELIMINARY EDUCATION.

REGULATIONS OF GENERAL MEDICAL COUNCIL.

No person shall be allowed to be registered as a Medical or Dental Student unless he shall have previously passed a Preliminary Examination in the subjects of General Education as specified in the following list:—*

1. English Language, including Grammar and Composition.†
2. English History.
3. Modern Geography.
4. Latin, including Translation from the original, and Grammar.
5. Elements of Mathematics, comprising (*a*) Arithmetic, including Vulgar and Decimal Fractions; (*b*) Algebra, including Simple Equations; (*c*) Geometry, including the first two Books of Euclid, or the subjects thereof.
6. Elementary Mechanics of Solids and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics.‡
7. One of the following Optional Subjects:—

   (*a*) Greek; (*b*) French; (*c*) German; (*d*) Italian; (*e*) any other Modern Language; (*f*) Logic; (*g*) Botany; (*h*) Elementary Chemistry.

List of Examining Bodies whose Examinations fulfil the conditions of the Medical Council as regards preliminary education:—

I. UNIVERSITIES IN THE UNITED KINGDOM.

UNIVERSITY OF OXFORD:—

1. Junior Local Examinations; Certificate to include Latin and Mathematics, and also one of the following optional subjects;—Greek, French, German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.
2. Senior Local Examinations; Certificate to include Latin and Mathematics.
3. Responsions.
4. Moderations.
5. Examinations for a Degree in Arts.

UNIVERSITY OF CAMBRIDGE:—

6. Junior Local Examinations; Certificate to include Latin and Mathematics, and also one of the following optional subjects:—
   Greek, French, German, Natural Philosophy, including the Elements of Statics and Hydrostatics.

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* The Examinations in General Education conducted by Universities will be accepted as heretofore, but if in any of these Examinations the subjects of Elementary Mechanics of Solids and Fluids are not included, the Candidate must pass in one or other of the remaining optional subjects instead, and a knowledge of Elementary Mechanics will be required at a subsequent Examination.

† "The General Medical Council will not consider any Examination in English Language sufficient that does not fully test the ability of the Candidate:—(1) To write sentences in correct English on a given theme, attention being paid to spelling and punctuation as well as to composition; —(2) to write correctly from dictation;—(3) to explain all the grammatical construction of sentences;—(4) to point out the grammatical errors in sentences ungrammatically composed, and to explain their nature; and (5) to give the derivation and definition of English words in common use."

‡ "This subject may be passed either as preliminary, or before, or at the first Professional Examination."

7. Senior Local Examinations; Certificate to include Latin and Mathematics.
8. Higher Local Examinations.
9. Previous Examination.
10. Examination for a Degree in Arts.

UNIVERSITY OF DURHAM:—

11. Junior Local Examinations; Certificate to include Latin and Mathematics, and also one of the following optional subjects:—
    Greek, French, German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics.
12. Senior Local Examinations; Certificate to include Latin and Mathematics.
13. Registration Examination for Medical Students.
14. Examination for Students at the end of their first year.
15. Examination for a Degree in Arts.

UNIVERSITY OF LONDON:—

16. Matriculation Examination.
17. Preliminary Scientific (M.B.) Examination.
18. Examination for a Degree in Arts or Science.

UNIVERSITY OF EDINBURGH:—

19. Local Examinations (Junior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
    Greek, French, German, Natural Philosophy.
20. Local Examinations (Senior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
    Greek, French, German, Natural Philosophy.
21. Preliminary Examination for Graduation in Science or Medicine and Surgery.
22. Examination for a Degree in Arts.

UNIVERSITY OF ABERDEEN:—

23. Local Examinations (Honours Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
    Greek, French, German, Natural Philosophy.
24. Preliminary Examination for Graduation in Medicine or Surgery.
25. Examination for a Degree in Arts.

UNIVERSITY OF GLASGOW:—

26. Local Examinations (Senior Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
    Greek, French, German, Natural Philosophy.
27. Preliminary Examination for Graduation in Medicine or Surgery.
28. Examination for a Degree in Arts.

UNIVERSITY OF ST. ANDREW'S:—

29. Local Examinations (Honours Certificate); Certificate to include English Literature, Arithmetic, Algebra, Geometry, Latin, and also one of the following optional subjects:—
    Greek, French, German, Natural Philosophy.
30. Preliminary Examination for Graduation in Medicine or Surgery.
31. Examination for a Degree in Arts.

UNIVERSITY OF DUBLIN:—

32. Public Entrance Examination.
33. Examination for a Degree in Arts.

Queen's University in Ireland:—

34. Local Examinations for Men and Women; Certificates to include all the subjects required by the General Medical Council.
35. Entrance or Matriculation Examination.
36. Previous Examination for B.A. Degree.
37. Examination for a Degree in Arts.

Royal University of Ireland:—

38. Matriculation Examination.

Oxford and Cambridge Schools' Examination Board:—

39. *Certificate, to include the following subjects:—
    (*a*) Arithmetic, including Vulgar and Decimal Fractions.
    (*b*) Algebra, including Simple Equations.
    (*c*) Geometry, including the first two Books of Euclid.
    (*d*) Latin, including Translation and Grammar.
    (*e*) Also one of these optional subjects:—
        Greek, French, German, Mechanical Division of Natural Philosophy.

Victoria University:—

40. Preliminary Examination; Latin to be one of the subjects.

II.—OTHER BODIES NAMED IN SCHEDULE (A) TO THE "MEDICAL ACT."

Apothecaries' Society of London:—

41. Examination in Arts.

Royal Colleges of Physicians and Surgeons of Edinburgh:—

42. Preliminary (combined) Examination in General Education.

Faculty of Physicians and Surgeons of Glasgow:—

43. Preliminary Examination in General Education.

Royal College of Surgeons in Ireland:—

44. Preliminary Examination; Certificate to include Mathematics.

Apothecaries' Hall of Ireland:—

45. Preliminary Examination in General Education.

III.—EXAMINING BODIES IN THE UNITED KINGDOM NOT INCLUDED IN SCHEDULE (A) TO THE "MEDICAL ACT" (1858).

College of Preceptors:—

46. Examination for a First Class Certificate, or Second Class Certificate of First or Second Division, Algebra, Geometry, Latin, and a Modern Language, having been taken.

Examiners for Commissions and Appointments in Her Majesty's Service, Military, Naval, and Civil:—

47. Certificate to include all the subjects required.

Intermediate Education Board of Ireland:—

48. Junior Grade Examination	Certificates in each case to include all the subjects required.
49. Middle „ „	
50. Senior „ „	

IV.—CERTAIN EXAMINATIONS OF INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

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* The *English* is provided for by the following *Resolution*, passed by the Executive Committee on October 27, 1876 (*Minutes*, Vol. XIII. p. 357):—

"That as every Candidate for the Certificate of the Oxford and Cambridge Schools' Examination Board is required to answer questions in such a manner as to satisfy the Examiners that he has an adequate knowledge of English Grammar and Orthography, this shall be held as conforming to the requirements of the Medical Council in reference to English Language."

III.—EDUCATIONAL BODIES.

LONDON.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, LEICESTER SQUARE.

HOSPITAL STAFF.

Consulting Physician—Dr. J. RISDEN BENNETT.

Consulting Surgeon—CHRISTOPHER HEATH, F.R.C.S.

Consulting Dental Surgeons.

SAMUEL CARTWRIGHT, F.R.C.S. JOHN TOMES, F.R.S.

Dental Surgeons.

9 a.m.—Monday	DAVID HEPBURN, L.D.S.
„ Tuesday	R. H. WOODHOUSE, M.R.C.S., L.D.S.
„ Wednesday.........	GEORGE GREGSON, M.R.C.S., L.D.S.
„ Thursday............	S. J. HUTCHINSON, M.R.C.S., L.D.S.
„ Friday...............	HENRY MOON, M,R.C.S., L.D.S.
„ Saturday...........	F. CANTON, L.R.C.P., M.R.C.S., L.D.S.

Assistant Dental Surgeons.

„ Monday	LAWRENCE READ, L.D.S.
„ Tuesday	ARTHUR S. UNDERWOOD, M.R.C.S., L.D.S.
„ Wednesday.........	CLAUDE ROGERS, M.R.C.S., L.D.S., D.D.S., U.S.
„ Thursday	GEO. PARKINSON, M.R.C.S., L.D.S.
„ Friday...............	STORER BENNETT, L.R.C.P., F.R.C.S, L.D.S.
„ Saturday...........	C. E. TRUMAN, M.R.C.S., L.D.S., M.A.

Administrators of Chloroform.

9.30 a.m.—Monday and Saturday....	G. H. BAILEY. M.R.C.S.
„ Tuesday and Friday ...	T. BIRD, M.A., M.R.C.S.
„ Wednesday..................	J. MILLS, M.R.C.S.
„ Thursday	F. WOODHOUSE BRAINE, F.R.C.S.

Demonstrators,

WILLIAM HERN, L.D.S.
JOHN ACKERY, M.R.C.S., L.D.S.

Medical Tutor.—W. PATERSON, F.R.C.S., L.D.S.

House Surgeon—S. C. BUCKLAND, L.D.S.

Assistant House Surgeon—ARTHUR KING, L.D.S.

Demonstrations.—The Medical Officers will make every effort to give Demonstrations to the junior pupils, on cases selected from time to time, every morning during the Lecture Session; and at the end of the Course those gentleman who have attended the Demonstrations to the satisfaction of the Medical Officers will be permitted to perform operations at the hospital under the supervision of the Medical Officers and the House Surgeon.

Dresserships for Cases of Extraction.—These appointments are held for two months, and consist of six Senior Dresserships for extractions under anæsthetics, and eighteen Junior Dresserships for ordinary extractions.

The Senior Dressers will be selected from those pupils only who have entered fully both to the practice and lectures of this hospital, and also to the Course required by the College of Surgeons for the Licence in Dental Surgery at one of the general hospitals.

MEDICAL SCHOOL.

The WINTER SESSION will commence on Wednesday, Oct. 1st., 1884.

The SUMMER SESSION will commence in May, 1885.

LECTURES.

Dental Surgery and Pathology,

Dental Anatomy and Physiology (Human and Comparative), by ARTHUR UNDERWOOD, M.R.C.S., L.D.S.

MEDICAL TUTOR.

The Medical Tutor attends on four days in the week, from 5 to 7 p.m., for two months previous to two of the Annual Examinations. His classes are open to all Students, and are intended to assist those who are preparing for their examinations at the College of Surgeon, generally speaking, to guide and direct the studies of the pupils, and prepare them in the subjects for the Examinations.

FEES.

GENERAL FEE FOR THE SPECIAL LECTURES REQUIRED BY THE CURRICULUM,

Viz., two Courses on Dental Anatomy, two Courses on Dental Surgery. two Courses on Mechanical Dentistry, and one Course of Metallurgy, £15 15s.

Fee for the Two Years' Practice of the Hospital required by the Curriculum, £15 15s.

Total Fee for the Special Lectures and Hospital Practice required by the Curriculum, £31 10s.

Students who perform Operations for Filling Teeth must provide their own Instruments for the same.

Additional Fees for a General Hospital for the two years, to fulfil the requirements of the Curriculum, vary from £40 to £50.

PRIZES.

The Prize-day will in future be held in July.

1. Prizes are awarded by the Lecturers for the best examinations in the subjects of their respective courses, at the end of the Summer and Winter Sessions.
2. Arrangements have been made for a prize in Operative Dentistry, in the competition for which each candidate is entrusted with the care of a mouth, which he shall, if not impracticable, set thoroughly in order.
3. A prize of the value of five guineas is also given by Messrs. Ash and Sons for the best essay on a surgical subject connected with the mouth.
4. A scholarship of the value of £20 has been founded by Sir Edwin Saunders, and will be awarded to the Student who has obtained the largest number of First Class Prizes during the Winter and Summer Sessions, preceding the July in which the award takes place.

Note.—The Medical Committee have resolved "that the holder of the Saunders' Scholarship be admitted without additional fee to an extra year of hospital practice."

The Dean requests that all Communications relating to the Medical School may be addressed to him at the Hospital, where he will attend in the afternoons. from Sept. 26th to Oct. 1st., inclusive, from 5 till 5.30 o'clock, or on Wednesday mornings from 10.30 till 12.

MORTON SMALE, M.R.C.S., L.D.S.,L.S.A., *Dean.*

NATIONAL DENTAL HOSPITAL AND COLLEGE, GREAT PORTLAND STREET, W.

HOSPITAL STAFF

Consulting Physicians.

B. W. Richardson, M.A., M.D., F.R.S.
W. H. Broadbent, M.D., F.R.C.P.

Consulting Surgeons.

Professor Erichsen, F.R.S. Sir Spencer Wells, Bart,, F.R.C.S.
Christopher Heath, F.RC.S.

Consulting Dental Surgeon—J. Merryweather, M.R.C.S.

Dental Surgeons.

Monday	F. Henri Weiss, L.D.S., Eng.
Tuesday	Alfred Smith, L.D.S., Eng.
Wednesday	G. A. Williams, L.D.S.. Eng.
Thursday	A. F. Canton, L.D.S., Eng.
Friday	Thomas Gaddes, L.D.S., Eng. & Edin.
Saturday	Harry Rose. L.D.S., Eng.

Assistant Dental Surgeons.

Monday	Willoughby Weiss, L.D.S., Eng.
Tuesday	R. G. Bradshaw, L.D.S., Eng.
Wednesday	Marcus Davis, L.D.S., Eng.
Thursday	H. G. Read, L.D.S., Eng.
Friday	Dennis Curnock, L.D.S., Eng.
Saturday	W. R. Humby, L.D.S.. Eng.

House Surgeon J. T. Patterson, L.D.S., Eng.
Assistant House Surgeon I. Prager, L.D.S.I.

Anæsthetists.

F. W. Hewitt, B.A., M.B., &c.
C. W. Glassington, M.R.C.S., L.D.S., Eng.
W. Tyrrell, L.R.C.P., M.R.C.S.
Henry F. Winslow, M.D., Lond. etc.

LECTURERS.

Dental Anatomy and Physiology	Thomas Gaddes, L.D.S., Eng. & Edin.
Dental Surgery and Pathology	Willoughby Weiss, L.D.S., Eng.
Dental Mechanics	Harry Rose, L.D.S., Eng.
Dental Metallurgy	Alfred Tribe, F.C.S., Fell. Inst. Chem.
Operative Dental Surgery	W. St. George Elliott, M.D., D.D.S.
Elements of Histology	Thomas Gaddes, L.D.S., Eng. & Edin.
Demonstrator of Dental Mechanics	W. R. Humby, L.D.S., Eng.
Arts and Literature	Rev. Dr. H. R. Belcher, M.A.

The hospital is open for the reception of patients every week-day from 9 o'clock till 11 o'clock a.m. The House Surgeon attends daily from 9 a.m. till 2 o'clock p.m.

Dresserships in the Extraction Room. These appointments are held for three months by six senior and six junior students of the hospital. The respective dressers for each day are required to be in attendance from 9 o,clock till the conclusion of the practice; and they will be under the direction of the Dental Surgeon for the day, and of the House Surgeon.

Clinical Lectures and Demonstrations Each medical officer will give clinical lectures, when opportune, during the ensuing year. Clinical lectures will also be given from time to time on cases of special interest; and also demonstrations upon the preparing and filling of cavities, and other operations upon the teeth and contiguous parts.

Attendance and Examination of Students. A register is kept of the attendance of students at the hospital practice and lectures. An attendance of full two years at hospital practice is required by the College of Surgeons of England; and no schedule will be signed for any lectures of which less than two-thirds have been attended. Class examinations are held frequently during the several courses to test the progress and attention of the pupils; and at the end of each course of lectures a written examination is held. An insufficient attendance at lectures disqualifies the student for receiving any prize of that year.

Tutorial classes are held to prepare for the final examinations students who have, at this school, complied with the Dental portion of the Curriculum.

LECTURES.

WINTER SESSION, COMMENCING ON TUESDAY, OCT. 2ND, 1884.

Dental Anatomy and Physiology, by Thomas Gaddes, L.D.S., Eng. and Edin. On Tuesdays and Thursdays at 7 p.m. during October, November, and December.

Operative Dental Surgery and Therapeutics, by W. St. George Elliott, M.D.. D.D.S. On Wednesdays, at 7 o'clock p.m., during November and December. (Free to students of the hospital and college.)

Dental Metallurgy, by Alfred Tribe, F.C.S. On Tuesdays at 9 a.m. during January, February, and March.

Dental Mechanics, by Harry Rose, L.D.S., Eng. On Mondays at 7 p.m. during January, February, and March.

Demonstrations on Dental Mechanics, by W. Robinson Humby, L.D.S.. Eng. On Wednesdays, at 7 p.m., during January, February and March. (Free to students of the college.)

SUMMER SESSION, 1884.

Dental Surgery and Pathology. On Mondays and Thursdays at 6 p.m., during May, June, and July.

Elements of Histology, by Thomas Gaddes, L.D.S., Eng. and Edin. On Wednesdays and Fridays at 7 p.m., during May and June. (Free to students of the college.)

Arts and Literature Class, conducted by the Rev. H. R. Belcher, LL.D., M.A. The arrangements for this Class will vary according to the requirements of the Students entering.

FEES.

GENERAL FEE FOR SPECIAL LECTURES REQUIRED BY THE CURRICULUM OF THE ROYAL COLLEGE OF SURGEONS IN ENGLAND. £12 12s.

Eees to Single Courses	One Course.	Two Courses.
Dental Anatomy and Physiology	£2 12 6	£4 4 0
Dental Surgery and Pathology	2 12 6	4 4 0
Dental Mechanics	2 12 6	4 4 0
Dental Metallurgy	3 3 0	5 5 0
*Operative Dental Surgery	2 2 0	
*Elements of Histology	1 1 0	
*Demonstrations on Dental Mechanics	1 0 0	

Arts and Literature Class (three months), £3 3s. Hospital Practice to Registered Practitioners (six months), £7 7s. Ditto (twelve months) 9s.9s.

Fee for the two years' Hospital Practice required by the Curriculum, £12 12s.

Total Fee for the Special Lectures and Hospital Practice required by the Curriculum, £25 4s.

PRIZES.

Five Prizes, in Medals, are open for competition among the Students of the College at the end of each Course of Lectures on the following subjects, viz.. Dental Anatomy, Dental Surgery, Dental Mechanics, Metallurgy, and Operative Dental Surgery.

Certificates of Honour will be awarded to those Students who show superior proficiency in any of the classes.

The Rymer Gold Medal for General Proficiency, value £5, will be awarded annually to the most distinguished Students of the year. His general conduct and attendance must have been in every respect satisfactory. At the time of the special examination for the Rymer Medal the Student must not hold any qualification. The Medal will be awarded on the understanding that the Student completes the Dental curriculum.

The Public Distribution of Prizes will take place at the commencement of the Summer Session.

THOMAS GADDES, *Dean*.

SCHOOL OF MEDICINE, SURGEON'S HALL, EDINBURGH.

The fees required for students attending general subjects for the curriculum of the Royal College of Surgeons, Edinburgh.

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* These lectures are free to students of the college who have fully entered for the Special Lectures.

EDINBURGH.

DENTAL HOSPITAL AND SCHOOL.

Consulting Physician—ALEX. PEDDIE, M.D., F.R.C.P.E.
Consulting Surgeon—JOSEPH BELL, F.R.C.S.E.
Consulting Surgeon Dentist—Dr. JOHN SMITH, F.R.C.S.E.

Dental Surgeons.

CHARLES MATTHEW, L.D.S. Edin.
WILLIAM BOWMAN MACLEOD, L.D.S. Edin.
MATTHEW FINLAYSON, L.D.S. Edin.
ANDREW WILSON, L.D.S. Edin.
GEORGE W. WATSON, L.D.S. Edin.
MALCOLM MACGREGOR, L.D.S. Edin.

Assistant Dental Surgeons.

J. S. AMOOVE, L.B.S. Edin.
J. STEWART DURWARD, L.D.S. Edin.
JAMES GRAHAM MUNRO, L.D.S. Edin.
JAMES MACKINTOSH.
JAMES LINDSAY, L.D.S. Edin.
W. FORRESTER.

Honorary Treasurer and Dean.

WM. BOWMAN MACLEOD, L.D.S., 43, George Square.

DENTAL. SCHOOL.

LECTURES.

Dental Anatomy and Physiology (Human and Comparative) by A. WILSON, L.D.S. (Edin.).—These Lectures will be delivered on the Evenings of Tuesday and Friday, at 8 o'clock, commencing on November, 1885. The Course consisting of twenty-four Lectures will be illustrated by preparations, models, diagrams, microscopical specimens, &c.

Dental Surgery and Pathology, by GEORGE W. WATSON, L.D.S. (Edin.).—These Lectures will be delivered on the Evenings of Tuesday and Friday, at 8 o'clock, during the Summer Session, commencing 6th May, 188 . The Course, consisting of twenty Lectures, will be illustrated by preparations, models, diagrams, microscopical preparations, &c.

Mechanical Dentistry, by W. BOWMAN MACLEOD, L.D.S. (Edin.).—The Lectures will commence on 5th November, 188 , at 8 p.m., and be continued every Wednesday thereafter till the Course of at least twelve Lectures is concluded.

Practical Mechanics Assistant Demonstrator, J. STEWART DURWARD, L.D.S. (Edin.).—In addition to the Systematic Lectures there will be given during the Session, Demonstrations on Dental Mechanics, and each Student will be expected to prepare the mouth, take the impression, make the denture, and insert the same in at least four cases. The Demonstrations will be spread over the two years of Hospital practice, and will be given as occasion serves. Students will require to furnish their own hand tools.

Gold Filling, by C. MATTHEW, L.D.S. (Edin).—In this Class Senior Students will receive instruction in various methods of Gold Filling, &c. The course consisting of ten Demonstrations, will commence on the first Monday of May, 1884, at 8 a.m., and be continued every Monday and Thursday thereafter till the Course is completed.

In the various classes prizes will be offered for competition.

General Fee for the Hospital Practice and Special Lectures required by the Curriculum.—Hospital Practice, including one Course of Demonstrations in Gold Filling, £15 15s. One Course each of Dental Anatomy, Dental Surgery, and Mechanical Dentistry and Demonstrations, £9 15s.—£25 10s.

Fees to Separate Classes.—Dental Anatomy, Dental Surgery, Mechanical Dentistry, Gold Filling, £3 5s. each.

The Hospital Practice and Lectures qualify for the Dental Diplomas of the Royal College of Surgeons, Edinburgh, and also for that of the other Licensing Bodies. Second Courses of the Lectures, as required by the Royal College of Surgeons of England, £2 4s.

For further information apply to the Dean, who will be found at the Hospital every Wednesday morning between 9 and 10 o'clock

The Session 1884-5 opens November 1st, 1885.

General Fee for the Hospital Practice and Special Lectures required by the Curriculum.

Hospital Practice, Two Years, including Demonstration in Gold Filling	£15	15	0
One Course, of not less than 24 Lectures in Dental Anatomy	9	15	0
" " 20 " " Surgery			
" " 12 " " Mechanics			
Total	£25	10	0

For further particulars, apply to the Dean, 30, Chambers Street, Edinburgh.

GLASGOW.

DENTAL HOSPITAL & SCHOOL, ANDERSON'S COLLEGE.

Hon. Consulting Physician—Professor Qerneuil.
Hon. Consulting Surgeon—Professor Morton, M.D., &c.
Chloroformist—William Muir, M.B., C.M.

Dental Surgeons.

James Cumming, L.D.S.F.P.S.G.
W. S. Woodburn, L.D.S.F.P.S.G.
John Foulds, L.D.S.F.P.S.G.
John Austin Biggs.
J. R. Brownlie, L.D.S.M.R.C.S. Eng.
David Taylor, M.D., L.D.S.

Assistant Dental Surgeons.

A. B. Young, L.D.S.
W. M. Adamson, L.D.S.
W. F. Martin, L.D.S.
D. R. Cameron, L.D.S.
J. M. McCash, L.D.S.
B. Sutherland, L.D.S.

Dental House Surgeon—

The Hospital is open daily, except Sunday, at 5 p.m. till 7 p.m. Anæthestics administered, when required, at 9 a.m.

The work of the Hospital is conducted, as far as possible, by the Students, under the supervision of the Dental Officer of the day. Cases of special interest will be made the subject of clinical instruction or demonstration as they occur.

The practice of the Hospital may be entered upon at any time during the Session, and attendance dated therefrom. Fee for the two years' practice required by the curriculum, £10 10s. Fee for each course of Lectures, £2 2s.

The Dental Students' Society meets once a month in the Committee Room of the Hospital, when papers on subjects of interest are read and discussed by the Members.

DENTAL SCHOOL.

Secretary to the Dental Lecturers—David Taylor, M.D., L.D.S. Glasg.

Dental Anatomy and Physiology, Human and Comparative, by David Taylor, M.D., L.D.S., Glasg.

The Lectures will be delivered in the Summer Session, on the Mornings of Wednesday and Friday, at 8 a.m., and will be illustrated by Diagrams, Preparations, and Microscopic Specimens. Text-book—Tomes's Manual of Dental Anatomy, Human and Comparative.

Dental Surgery and Pathology, by James Rankin Brownlie, L.D.S. Eng.

These Lectures are delivered on Tuesdays and Thursdays, during the months of May and June, at 8 a.m., and will be illustrated by recent Specimens, and other Preparations, and Drawings, &c. Text-books—Tomes's Manual of Dental Surgery; Salter's Dental Pathology and Surgery; Harris's Principals and Practice of Dentistry.

Mechanical Dentistry, by W. S. Woodburn, L.D.S, Glasg.

This Course will commence on the first Thursday of October, at 8 o'clock p.m., and will consist of 12 Lectures, with Practical Demonstrations in the Dental Laboratory.

All communications on matters relating to the Dental School, should be addressed to Dr. David Taylor, *144, Wellington Street, Glasgow, who will forward detailed Prospectus of the School.*

BIRMINGHAM.

BIRMINGHAM SCHOOL OF DENTISTRY, QUEEN'S COLLEGE.*

The teaching of Dentistry is now undertaken by the Queen's College, acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board, so that students may fully qualify themselves for the Dental Diplomas of the Royal Colleges.

The Dental Hospital is situated near the College, and is open daily (Sundays excepted). The number of patients treated there during the past year was upwards of 7,000.

The General and Queen's Hospitals offer every advantage for the study of General Surgery and Medicine, the arrangements for which are carried ou under the direction of the Birmingham Clinical Board.

LECTURES FOR THE DENTAL CURRICULUM.

Winter Session.

Special Subjects.

Dental Anatomy and Physiology.—F. Robert Batchelor, L.D.S.I., Dental Surgeon to the Dental Hospital. Thursdays, at 5, p.m.

Dental Surgery and Pathology.—Thomas Howkins, M.R.C.S. Fridays, at 5, p.m.

Dental Metallurgy.—W. A. Tilden, D.Sc., F.R.S. N.B.—This Class will be held at Mason's College. About ten lectures on this subject will be given in the course of the Winter Session, due notice of which will be given.

General Subjects.

Anatomy, Practical Anatomy, Physiology, Chemistry, Medicine, Surgery. These Classes are similar to those in the Medical Department.

Summer Session.

Special Subject.

Dental Mechanics.—Charles Sims, L.D.S.E., Senior Dental Surgeon to the Dental and Queen's Hospitals. Wednesdays, at 5 p.m.

General Subjects.

Materia Medica and Therapeutics. Practical Chemistry.—These Classes are similar to those in the Medical Department.

Fees.

A Composition Fee of 60 guineas, payable in one sum, or in two sums, viz., 40 guineas at the beginning of the first year, and 20 guineas at the beginning of the second year of studentship, admits to the full curriculum required for the Dental Diploma (inclusive of the necessary Hospital Practice.)

N.B.—Further particulars may be obtained on application to the Warden at the College, or to Mr. Charles Sims, at 51, Union Passage, Birmingham.

DENTAL HOSPITAL,* NEWHALL STREET.

Open daily at 9 a.m.

Consulting Physician—James Sawyer, M.D. Lond., M.R.C.P., Senior Physician to the Queen's Hospital.

Consulting Surgeon—Furneaux Jordan, F.R.C.S., Senior Surgeon to the Queen's Hospital.

Consulting Dentists.

Thomas R. English. Adams Parker, L.D.S., R.C.S.E.

Administrators of Anæsthetics.

F. H. Maberley, M.R.C.S., L.R.C.P.E. J. W. Moore, M.R.C.S.
J. S. Greene, M.R.C.S., L.S.A.

Dental Surgeons.	*Days of Attendance.*
Charles Sims, L.D.S., R.C.S. Eng.	Wednesdays.
H. Breward Neale, L.D.S., R.C.S.I.	Thursdays.
F. R. Batchelor, L.D.S. R.C.S.I.	Mondays and Fridays.
F. E. Huxley, M.R.C.S., L.D.S.	Tuesdays and Saturdays.

Assistant Dental Surgeons.

DEMONSTRATIONS.

Clinical Demonstrations will be given from time to time by the Staff on cases of particular interest; also upon the Preparing and Filling of Cavities, and other operations upon the teeth and contiguous structures.

DRESSERSHIPS IN THE EXTRACTION ROOM.

These appointments are held for three months by senior and junior Students of the Hospital. The respective dressers for each day are required to be in attendance from 9 o'clock to the conclusion of the practice; and they will be under the direction of the Dental Surgeon in attendance.

Dental Hospital Practice:

If taken separately, 2 years......	£14 14 0
„ „ 1 year	8 8 0
„ „ 6 months...	5 5 0

For further information connected with the Hospital apply to the Hon. Secretary, Frank E. Huxley, Esq., 23, Waterloo Street, with whom Students are required to register their names for Hospital Practice.

DENTAL HOSPITAL OF IRELAND,

29, YORK STREET, DUBLIN.

The WINTER SESSION will commence Monday, October 6th, 1884.

The SUMMER SESSION will commence in May, 1885.

Consulting Physician—ROBERT D. LYONS, M.D., M.P., JOHN W. MOORE, M.D.

Consulting Surgeons—E. H. BENNETT, F.R.C.S.I. WILLIAM STOKES, F.R.C.S.I.

Consulting Dental Surgeons—R. H. MOORE, F.R.C.S.I. DANIEL CORBETT, M.R.C.S.E.

Dental Surgeons—JOHN A. BAKER, F.R.C.S.I. R. THEODORE STACK, F.R.C.S.I., D.M.D. (Harv.). A. W. W. BAKER, M.B., Ch.M. DANIEL CORBETT, Jun.,F.R.C.S.I.

Pathologist—PHIN. S. ABRAHAM, F.R.C.S.I.

Registrar—WILLIAM A. SHEA.

In connection with the Dental Hospital of Ireland, the Dental School will open for the Westminster Session on October 6th, 1884.

All Dental Students who have passed their Preliminary Examination are admissible to the Clinical Instruction of the Hospital, after paying Fees and subscribing to the conditions prescribed by the Staff.

In addition to Clinical Instruction, Courses of Lectures will be given through the year on Dental Surgery, Dental Anatomy, Mechanical Dentistry, and Metallurgy by the following Lecturers:—Dental Surgery: A. W. W. Baker, M.B., Ch.M. Dental Anatomy: Daniel Corbett, Jun., A.B., F.R.C.S.I. Mechanical Dentistry: R. Theodore Stack, M.D., F.R.C.S.I., D.M.D., Professor of Dentistry, Royal College of Surgeons. Metallurgy: Charles Cameron, M.D., F.R.C.S.I., Professor of Chemistry, Royal College of Surgeons.

These Lectures are intended to supplement the Lectures given in the Medical Schools, and give to the Dental Student in Ireland the opportunity of fulfilling in his own country the conditions of curriculum required by the different licensing bodies in the United Kingdom.

The Lectures on Mechanical Dentistry and Metallurgy will be given during the winter; those on Dental Surgery and Anatomy during the summer months. In addition to the longer courses, special courses, of three months' duration, will be given to Surgeons about to join the Army and Navy, or to practice in the Colonies.

Amongst the advantages of the School is the Mechanical Laboratory where each student is allotted his own bench, and every effort is made to assist him in Mechanical Dentistry. This year, in addition to practical instruction in the details of Gold, Dental Alloy, Vulcanite, Celluloid, and continuous Gum Work, special demonstrations will be given in the Mechanical Treatment of Cleft Palate, by Mr. Theodore Stack, in the Treatment of Dental Irregularities, by Mr. A. W. W. Baker, and in the various methods of inserting Pivot Teeth, by Mr. Daniel Corbett, Jun.

Regulations as to Fees and other conditions are the same as exist at the Dental Hospital of London, Leicester Square.

The WINTER SESSION ccommence MONDAY, OCTOBER 6th, 1884.

LECTURES.

Mechanical Dentistry—Mr. Theodore Stack, D.M.D., F.R.C.S.I., Professor of Dentistry, Royal College of Surgery.

Metallurgy—Mr. Charles Cameron, M.D., F.R.C.S.I., Professor of Chemistry, Royal College of Surgeons.

THE SUMMER SESSION will commence in MAY.

Total Fee for Lectures and Practice (not including Mechanical Laboratory), £31 10.

Any further information can be obtained from Mr. William A. SHEA, Registrar, or from

R. THEODORE STACK, Dean.

MANCHESTER.

THE VICTORIA DENTAL HOSPITAL OF MANCHESTER.

98, GROSVENOR STREET, OXFORD STREET.

Open daily (Sundays excepted), from 8.30 to 10 p.m.; and on Mondays, Wednesdays, and Fridays from 6 to 8 p.m.

Patrons.

Right Hon. Earl of CRAWFORD and BALCARRES.
Right Hon. Lord EGERTON of Tatton.

Hon. Treasurer.—F. W. TRAVERS.

Hon. Secretary.—F. E. BUMBY.

Vice-Presidents.

The Bishop of MANCHESTER.
The Bishop of SALFORD.
Archdeacon ANSON.
THOMAS ASHTON, J.P.
EDWARD BEHRENS.
JACOB BRIGHT, M.P.
Rev. Dr. BURTON.
W. CUNLIFFE BROOKS, M.P.
JOSEPH BROWN.
JAMES CHADWICK.
Chancellor CHRISTIE.
W. G. CRUM.
Alderman CURTIS, J.P.
ARTHUR GAMGEE.
OLIVER HEYWOOD.
W. H. HIGGINS, Q.C.
W. H. HOULDSWORTH, M.P.
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Major W. O. POOLEY, J.P.
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JOHN RYLANDS, J.P.
H. SAMSON, J.P.
JOHN SLAGG, M.P.
Colonel THOMAS SOWLER, M.P.
JAMES WORTHINGTON.

Consulting Physicians.

Dr. WM. ROBERTS.
Dr. SIMPSON.
Dr. D. LLOYD ROBERTS.
Dr. MORGAN.
Dr. LEECH.

Consulting Surgeons.

E. LUND.
F. A. HEATH.
J. HARDIE.
W. WHITEHEAD.
T. JONES

Committee of Management.

S. L. Helm, Chairman.
Canon Birley.
Thos, Black.
A Boyd.
R. Brookhouse.
A. Crewdson.
G. H. Darwen, M.D.
W. Gray.
D. B. Hewitt, M.D.
H. L. Knoop.
W. A. Copinger, Vice-Chairman.
Councillor A. Marshall.
J. Norris.
T. North.
Reuben Spencer.
W. Steele Tomkins.
J. Crewdson Waterhouse.
G. W. Wilson.
R. B. Wilson.

Consulting Dental Surgeons.

H. Campion, M.R.C.S., Eng.
G. W. Smith, M.R.C.S,, Eng. & L.D.S., Eng.
S. A. Rogers, L.D.S., Eng
Parsons Shaw, D.D.S.

Dental Surgeons.

Monday—H. Planck, D.D.S., I.; P. Headridge, L.D.S., I.; Jos. Williams, L.D.S., I.; P. Betts, D.D.S.
Tuesday—T. Tanner, L.D.S., Eng.; L. Matheson, L.D.S., Eng.
Wednesday—H.C. Smale,L.D.S.,Eng.; J. H. Molloy,L.D.S., I.; H.A.Mann; W. Dykes, L.D.S., Glasgow.
Thursday—Geo. Crocker, L.D.S.
Friday—T. Buckley, L.D.S., I.; L. Dreschfeld, L.D.S., I.; W. Headridge, L.D.S., I.
Saturday—W. Smithard, L.D.S., I.; J. W. Dunkerley.
Administrator of Anæsthetics—J. J. Kent Fairclough, M.D.,M.R.P.S.,&c.

The Committee are about to apply to the Royal College of Surgeons (London) for recognition of the Hospital, and as soon as this has been obtained the Hon. Secretary will be happy to furnish all necessary information about Fees for Hospital practice, &c.

LIVERPOOL.

DENTAL HOSPITAL, MOUNT PLEASANT.

Consulting Physician—Thomas Robinson Glynn, M.D., M.R.C.P. Lond., &c.
Consulting Surgeon—W. Michell Banks, M.D., F.R.C.S.

Consulting Dental Surgeons.

W. J. Newman, L.D.S.I.
R. F. Stewart, L.D.S.Eng.

Dental Surgeons.

Thomas F. Austin.
W. H. Waite, D.D.S.. L.D.S.I.
D. Dopson, L.D.S.I.
J. N. P. Newton, L.D.S.Eng., D.D.S.
Frederick Rose, L.D.S.Eng.
Charles Alder, L.D.S.I.

Assistant Dental Surgeons.

Chas. T. Stewart.
E. A. Councell, L.D.S.Eng.

This Hospital is a School of Practical Dental Surgery duly recognised by the Royal College of Surgeons and open to all Students of Dentistry, under such regulations as shall be determined by the Committee of Management.

The Hospital is open daily for the admission of patients from 9 till 11 a.m., and from 6 to 7 p.m.

Fees for Hospital practice £5 5s. per annum to students of the Liverpool Royal Infirmary School of Medicine and pupils or apprentices of registered Dentists.

Further information may be obtained by applying to the Honorary Secretary, W. L. Jackson, c, Queen Insurance Buildings, 10, Dale Street.

PLYMOUTH.

DENTAL DISPENSARY, OCTAGON.

Physician—C. Albert Hingston, M.D. Lond.

Surgeons.

Christopher Bulteel, F.R.C.S.

Connell Whippel, M.R.C.S.

Consulting Dentist—F. A. Jewers, M.D.S.

Dental Surgeons.

W. V. Moore, D.L R.C.S.E.
C. Spence Bate, F.R.S., D.L.R.C.S.E., &c.
Francis H. Balkwill, D.L.R.C.S E.
Alfred George Hambly, L.D.S.I.
Ernest E. Jewers, L.D.S.Eng.
Ernest Edward Jewers, L.D.S.E.
Henry William Mayne, L.D.S.I.

Treasurer—Alfred Payne Balkwill.

The Dentists attend each day at 9 a.m. except Sundays.

DENTAL SCHOOL.

Certificates of attendance on the practice of this Dental Dispensary are recognised by the College of Surgeons as qualifying for the Diploma in Dental Surgery. The College also recognises the lectures delivered at the Dispensary.

Pupils of any of the Dental Surgeons of the Plymouth Dental Dispensary, or other Dentists holding a Diploma of the College of Surgeons, or Member of the Odontological Society may attend the Dispensary on the day of such practitioner as may agree to accept such pupil, or pupils, on the payment of £1 1s. per annum to the Institution.

Lectures.

On "Dental Physiology," by C. Spence Bate, F.R.S., L.D,S., R.C.S.E.
On "Dental Anatomy," by F. H. Balkwill, L.D.S., R.C.S.E.
On "Dental Mechanics," by W. V. Moore, L.D.S., R.C.S.E.
Fee to Lectures, one Course, £7 7s.
Fee to Lectures, double Course, £12 12s. (required for Diploma).
Fee to Dental Practice at Dispensary, £5 5s. per annum.
Fee to entire Dental Curriculum (required for Diploma), 22 Guineas.

Further information may be obtained from the Secretary, Mr. E. G. Bennett, at above address.

EXETER.

DENTAL HOSPITAL.

Consulting Surgeons.

A. J. Cumming, F.R.C.S. Eng.

William Clapp, F.R.C.S. Eng.

Surgeon Administrator of Anæsthetics—W. A. Budd, M.R.C.S. Eng.

Dental Surgeons.

J. T. Browne-Mason, L.D.S. Eng.
S. Bevan Fox, L.D.S. Eng.
Henry Biging Mason, L.D.S. Eng.
T. G. T. Garland, L.D.S.I.
J. Mc. Kno. Ackland, L.D.S. Eng

Honorary Secretary—Henry B. Mason.

Attendance on the practice of this hospital is recognised by the Royal College of Surgeons of England as qualifying for their Dental diploma.

The hospital is open daily (Sundays excepted), and patients are admitted between the hours of 9 and 11 a.m.

Pupils of any member of the staff, or other registered practitioner (being a Life or Annual Governor), are permitted to attend the practice of the hospital, subject to the approval of the Medical Sub-Committee, on payment of Five Guineas annually to the funds of the Institution. Students attending the practice of the Hospital must consider themselves strictly under the control of the Medical Officers, and must not undertake any operation without the consent of the Dental Surgeon for the day.

Number of cases treated in 1883, 5,735.

PRIVATE SCHOOL OF ANATOMY, PHYSIOLOGY, AND SURGERY.

Demonstrations and lectures by Mr. Thomas Cooke, F.R.C.S., senior assistant surgeon to the Westminster Hospital.

This school of anatomy, physiology, and surgery meets the requirements of two distinct classes of students, *i.e.*—1. Advanced students and qualified practitioners, who may wish either to extend their knowledge of the foregoing subjects, or to recall to mind what they once knew and have since forgotten; 2. Beginners entering upon their medical duties by a short term of apprenticeship with a general practitioner. For the former, rapid advanced classes, complete in three months, but still thoroughly practical are provided; and for the latter, more elementary classes of six months' duration, also thoroughly practical.

The operations of surgery are all performed on the dead body by the students. The course is recognised by the London University.

The dissecting-room is open daily from 10 a.m. to 6 p.m. The demonstrators attend four hours daily. The Physiological Laboratory is fitted with the requisites for practical work.

Fees.—Anatomy and physiology: For primary membership examination of royal college of surgeons, three months, £4 4s.; six months, £5 5s. For primary fellowship examination (with comparative anatomy), six months, £5 5s. Surgery: For second membership examination of royal college of surgeons. three months, £5 5s.; six months, £8 8s.; for second fellowship examination, six months, £8 8s.

GENERAL HOSPITALS.

CHARING CROSS HOSPITAL.

Dental Surgeon—J. Fairbank, M.R.C.S., who attends at the Hospital three days a week for Dental operations. A course of Lectures on Dental Surgery is also given during January, February, and March,

The fee at this hospital for the L.D.S. Course is £42 2s., which may be paid in two instalments; this includes the matriculation fee of £2 2s., for which the student enjoys all the privileges of a matriculated student, which are as follows:

1st. They pay a proportionately lower amount of fees.

2nd. They alone are eligible for the following offices and appointments:—Resident medical officer, resident surgical officer, resident accoucheur, assistant demonstrator, pathological assistant, clinical clerks, dressers, dentist's assistant, etc.

3rd. They are admitted to the use of the library and reading rooms.

4th. They are admitted, without additional fee to the clinical and pathological demonstrations, and enjoy other advantages.

5th. They alone are entitled to compete for the scholarships.

Two prizes are awarded annually in the class of lectures on Dental Surgery, of the value of six guineas and four guineas respectively.

Students may serve as assistants to the Dental Surgeon for a period of three mouths.

The attention of Dental students is drawn to the re-arrangements which have been made in the hours of lectures, so as to enable students to attend the practice at the Dental Hospital of London. Charing Cross Hospital is within three minutes walk of the Dental Hospital of London.

For further information apply to the Dean. Dr, J. Mitchell Bruce, or to the Secretary, who attends daily at the office of the Medical School, Chandos Street, Charing Cross, between the hours of 10 and 4.

KING'S COLLEGE, STRAND, W.C.

No special arrangements are made for Dental Students

LONDON HOSPITAL MEDICAL COLLEGE.

Dental Surgeon—Ashley Barrett, M.B.Lond., M.R.C.S.

The Council of the College of Surgeons recognise the Dental Department of the London Hospital as a school at which may be obtained the Dental Practice necessary to qualify a student for the Examination for the Dental Diploma. Dental Students may obtain the General Medical Education (that is, apart from certain Special Lectures to be attended at a Dental School) and the Dental Practice, necessary for the Diploma, at the London Hospital School on payment of 40 Guineas.

A Course of Lectures on the Anatomy and Pathology of the Teeth, and Dental Surgery, will be delivered by Mr. Ashley Barrett on days which will be duly announced. It comprises the treatment of Dental Irregularities, and of Toothache, and such matters in connection with the subject, as are of interest to the Medical Practitioner. Mr. Barrett gives practical instruction on Tuesdays at 9 a.m., which is open to all Students of the School and Hospital, and can be attended by gentlemen who are not pupils, on payment of a fee of 10 Guineas.

A Dental Assistant is elected every three months, without any additional expense. The terms of office date from the first Tuesday in January, April, July, and October. In selecting Candidates priority will be given to those who have attended the greatest number of Lectures on Dental Pathology and Surgery, and have also been the most punctual in attendance in the Dental Department on Tuesday mornings.

Further information may be obtained on application to Mr. Munro Scott, the Warden, Medical College, London Hospital.

MIDDLESEX HOSPITAL.

Consulting Dental Surgeons—J. Tomes, F.R.S., M.R.C.S., L.D.S., and J. S. Turner, M.R.C.S., L.D.S.

Dental Surgeon—W. Storer Bennett, F.R.C.S., L.R.C.P., L.D.S.

Assistant Dental Surgeon—Claude Rogers, D.M.D., M.R.C.S., L.D.S.

Students who intend to become Licentiates in Dental Surgery of the Royal College of Surgeons are admitted to attend the requisite courses of Lectures and Hospital Practice on payment of a fee of 40 guineas, in one payment, or by instalments of £30 on entrance, and £15 at the beginning of the second Winter Session.

A short course of Lectures on Dental Surgery will be delivered during November and December by the Lecturer on Dental Surgery, Mr. Storer Bennett. The Lectures will be supplemented by practical demonstrations, which will be given every week during the Winter and Summer Sessions by the Dental Surgeon and Assistant Dental Surgeon. Students of the hospital free. others pay a fee of 5 guineas.

Further information may be obtained from Andrew Clarke, Esq., the Dean, or from the Resident Medical Officer at the hospital.

GUY'S HOSPITAL MEDICAL AND SURGICAL SCHOOL.

Dental Surgeon—H. Moon, M.R.C.S., L.D.S.

Dressers are appointed to the Dental Surgeon, and hold office for two months, each receiving special certificates.

Practical instruction in Dental Surgery is given every Tuesday at 1.30 and Thursday at 12.30 o'clock. A certain number of cases of cleft palate, perforate palate, irregularities, lost portions of jaw, &c., are constantly under treatment for the instruction of students, the necessary apparatus being supplied at the expense of the hospital.

A course of Lectures on Dental Surgery is delivered during the Summer Session, and special instruction is given on this subject in the Surgery, by Mr. Moon, throughout the year.

Application respecting the School may be made to the Dean, Dr. F. Taylor.

ST. GEORGE'S HOSPITAL.

Dental Surgeon—A. WINTERBOTTOM, F.R.C.S., L.D.S.

Mr. Winterbottom attends at the hospital on Tuesdays and Saturdays at 9 a.m.; his assistant daily at 9 a.m., and at 1 p.m.

A course of Lectures on Dental Surgery is given by Mr. Winterbottom in the Summer Session. Free to students of the hospital.

Fee for general subjects in Dental Surgery, including Practical Chemistry, £55. Payable in two instalments: first year, £30; second year £25.

Further information can be obtained by application to Dr. Wadham, Dean of the Medical School.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

Dental Surgeon.—Vacant.

Assistant Dental Surgeons.—ISIDORE J. LYONS, M.R.C.S., L.D.S., and FRANCIS EWBANK, M.R.C.S., L.S.A.

The Dental Department of the hospital is open on Tuesday and Friday mornings at 9 o'clock. The practice of the department is recognised by the Royal College of Surgeons.

Lectures on Dental Surgery, Anatomy, Physiology, and Pathology, on Saturdays, at 10.30 a.m., during the months of October, November, and December; the fee for one course is £2 12s. 6d., unlimited £4 4s. These Lectures are recognised by the Royal College of Surgeons as a course of Dental Surgery required for the Dental Diploma.

The fee for general subjects for Dental students for the first winter is £33 2s. 6d., for the first summer £33 2s. 6d., or a single payment of £66 3s.

This hospital is the oldest and one of the largest in London, and among many advantages which it offers to the student is that provision is made for their residence in the College, on the recommendation of a medical officer of the hospital. For the terms of board and residence and all other information regarding the College, application should be made, either personally, or by etter, to the Warden of the College, Dr. Moore.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

Dental Surgeon—H. HOWARD HAYWARD, M.R.C.S., L.D.S.

Practical instruction in Dental operations is given on Wednesdays and Saturdays at 9.30 a.m. Dressers are appointed who hold office for three months. Also a special course of Lectures on Dental Surgery.

Fee for the course, £2 12s. 6d.

Further information may be obtained by application to George Field, Esq., M.R.C.S., Dean of the School.

ST. THOMAS'S HOSPITAL.

Dental Surgeon—WILLIAM GILL RANGER, M.R.C.S.

Assistant Dental Surgeon—CHARLES EDWIN TRUMAN, M.R.C.S., L.D.S.

Gentlemen may receive instruction in diseases of the teeth, are appointed dressers, and can undertake operations, subject to the supervision of the Dental Surgeons, Tuesdays and Fridays at 10 a.m.

Numerous cases of irregularity of the teeth, stoppings, and the application of artificial appliances, are undertaken during the term.

The fee for attendance on the *general* subjects required of the students in Dental Surgery, is for the two years £55, or by instalments, £50 for the first year, and £10 for the second year.

Dental practice, one year, two guineas; perpetual, three guineas.

For further information apply to G. RENDLE, ESQ., M.R.C.S., Medical Secretary.

OWEN'S COLLEGE, MANCHESTER.

A complete course in Dental Surgery, such as will enable students to prepare for the examinations of the Royal College of Surgeons for the licence in Dental Surgery, will be organised in the course of the Session 1884-5. Prospectuses will be issued shortly. J. Holme Nicholson Registrar.

WESTMINSTER HOSPITAL

Dental Surgeons—J. WALKER, M.D., M.R.C.S., L.D.S., and A. MORTON SMALE, M.R.C.S., L.D.S.

Dr. Walker attends at 9.15 a.m., on Wednesdays, and Mr. Morton Smale, on Saturdays at 9.15 a.m., for practical demonstration of diseases and operations on the teeth.

The fee for attendance on the Dental Practice is £2 2s. for three months, and £3 3s. for six months. The whole of the General Lectures and Surgical Practice required for the Dental Diploma of the College of Surgeons can be attended for £50, in one sum, on entrance, or for two sums of £32 10s. and £20, payable at the beginning of each year.

Dr. Walker will deliver a course of Lectures on Dental Surgery and Pathology on Wednesdays, in October, November, and December, at 9.30 a.m.

Classes in Metallurgy in its application to Dental purposes, Dental Anatomy and Physiology, and in Dental Mechanics, will be formed should a sufficient number of students give in their names.

The Calendar will be forwarded on application to Dr. de Havilland Hall, Dean of the School, who will afford every information.

SCHOOL OF MEDICINE, SURGEON'S HALL, EDINBURGH.

The fees required for students attending general subjects necessary for the curriculum of the Royal College of Surgeons, Edinburgh, are £38 10s.

HARVARD UNIVERSITY, DENTAL DEPARTMENT, BOSTON, MASS., U.S.A.

THE Sessions of this School begin the last Thursday in September, and end the last Wednesday in June, making nine months of practically continuous work in each year.

General Anatomy with Dissections, Physiology, and General Chemistry, are the Studies of the first year. Of the second year they are Operative and Mechanical Dentistry, Dental Materia Medica and Therapeutics, Oral Surgery and Surgical Pathology. The Student can also attend gratuitously all the *lectures* in any other department of the University.

The Infirmary of the Massachusetts Hospital furnishes abundant facilities, averaging 8000 operations, of which a large proportion consists of filling teeth, every year.

The University degree, D.M.D. (Dentariæ Medicinæ Doctor) is conferred on all who fulfil the requirements.

The diploma is recognised by the English Medical Council.

For the first year a Student is a member of the school the fee is 200 dols., for the second year 150 dols., and for any subsequent year 50 dols.

For further information and catalogues, address, Thomas H. Chandler, Dean, Hotel Bristol, Corner Boylston and Clarendon Streets, Boston, Mass, U.S.A.

THE DENTAL COLLEGE OF THE UNIVERSITY OF MICHIGAN.

The Ninth Annual Session of this Institution will commence on the 1st of October, and close on the last Wednesday of March, thus making a course of nine months. A preliminary examination, having reference to general educational attainments is required.

The students in this department will receive instructions in Anatomy, Physiology, Pathology, Chemistry, Materia Medica, Therapeutics and Surgery, from the Professors of their respective branches in the *Department of Medicine and Surgery* of the University, when lectures commence, and continue the same as with the Dental College.

FACULTY OF THE DENTAL DEPARTMENT.

J. B. ANGELL, L.L.D.	President
J. TAFT, M.D., D.D.S.	Principles and Practice of Operative Dentistry
CORYDON L. FORD, M.D., D.D.S.	Anatomy and Physiology
J. A. WATLING, D.D.S.	Clinical and Mechanical Dentistry
W. H. DORRANCE, D.D.S.	Prosthetic Dentistry
U. D. BILLMEYER, D.D.S.	Demonstrator of Clinical Dentistry
G. S. CASE, D.D.S.	Demonstrator of Prosthetic Dentistry.

Special instruction will be given in Dental Pathology, Oral Surgery, Dental Therapeutics, and Diseases of Women and Children, with reference to the teeth.

Students should be promptly present at the College on Friday, September 28th. at 10 o'clock a.m., to make the preliminary arrangements for entering upon regular work.

CONDITIONS OF GRADUATION.

The candidate must be twenty-one years of age. He must furnish evidence of good moral character.

He must devote three years to the study of his profession. He must attend two full courses of lectures in the Dental College, or one course in some college having an equal standard of requirements, and the last one here, and we recommend that he attend three courses regularly.

He must sustain an examination satisfactory to the Faculty in all the branches taught.

FEES AND EXPENSES.

The fees which must be paid in advance. are as follows:

RESIDENTS OF MICHIGAN.—Matriculation Fee, Dols. 1,000; annual dues, Dols. 25.00.

NON-RESIDENTS.—Matriculation, Dols. 25.00; annual dues, Dols. 35.00.

GRADUATION FEE.—For all alike, Dols. 10.00. The admission fee is paid but once, and entitles the student to the privilege of permanent membership in any department of the University. The annual due is paid the first year and every year thereafter while at the University.

For further particulars, address the Dean of the Dental College, Ann. Arbor, Mich.—J. Taft, Dean.

IV. SCIENTIFIC ASSOCIATIONS.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

President—JAMES SMITH TURNER.

Vice-Presidents:

RESIDENT.	NON-RESIDENT.
HENRY MOON.	W. DOHERTY (Dublin).
T. C. WHITE.	J. T. BROWNE-MASON (Exeter).
G. GREGSON.	R. WHITE (Norwich).

Treasurer—JAMES PARKINSON.

Librarian—FELIX WEISS. | *Curator*—S. J. HUTCHINSON.

Honorary Secretaries.

J. HOWARD MUMMERY (Council)
DAVID HEPBURN (Society).
R. WOODHOUSE (Foreign).

Councillors.

Resident.—F. CANTON; G. A. IBBETSON; A. GIBBINGS; T. A. ROGERS; A. CARTWRIGHT; C. S. TOMES; W. St.GEORGE ELLIOTT; A. WINTERBOTTOM; S. BENNETT.

Non-Resident.—R. ROGERS (Cheltenham); W. HELE (Carlisle); A. WILSON (Edinburgh); COLE (Ipswich); McADAM (Hereford); HARDING (Shrewsbury).

EXTRACTS FROM THE BYE-LAWS.

Objects and Constitution of the Society.

This Society is instituted for the encouragement and diffusion of knowledge in Dental Surgery, and for the promotion of intercourse among members of the Dental Profession.

The Society shall consist of resident, non-resident, corresponding, and honorary members.*

1. The resident members shall consist of gentlemen practising as Dental Surgeons in London, or within ten miles of General Post Office, St. Martin's-le-Grand.
2. The non-resident members shall consist of gentlemen practising as Dental Surgeons residing beyond ten miles from London.
3. The Corresponding members shall consist of distinguished gentlemen practising as Dental Surgeons, residing in the Colonies of Great Britain or foreign countries.
4. The honorary members shall consist of distinguished practitioners of Dental Surgery who have retired from practice, of distinguished medical practitioners, and of gentlemen distinguished in any department of science.

Persons who advertise in the public journals or by circular, either their profession or their professional attainments or public appointments, or anything relating to their mode of practice or charges, or who expose for public inspection specimens of operatic or mechanical Dentistry, or conduct their practice in any way which in the opinion of the Council of this Society is derogatory to the respectability of the profession, shall not be considered eligible for nomination as members.

No person being the proprietor of a secret remedy, or holding a patent relating to the requirements of Dental practice, shall be a member of this Society.

Election and admission of Resident and Non-Resident Members.

Recommendations for resident members shall be signed by two members from personal knowledge, and by two or more from general knowledge. Recommendations for non-resident members may be signed by one member only from personal knowledge, and by two or more from general knowledge.

All recommendations for resident or non-resident members shall be submitted to and approved of by the Council before being proposed to the Society for Ballot.

Contributions of Members.

Every person elected a resident member shall pay three guineas as an admission fee, and an annual subscription of two guineas, *in advance.*

Every person elected a non-resident member shall pay two guineas as an admission fee, and an annual subscription of one guinea, *in advance.*

The entrance fees and first annual subscription shall be paid on admission, and the subsequent annual subscriptions in the month of November in each year; but new members, proposed at or after the annual meeting, shall not be required to pay any subscription for the current session.

Ordinary Meetings.

The ordinary meetings of the Society shall be held on the first Monday in each month, from November to June, both inclusive, at 8 p.m., precisely, except in the month of January.

Each member may introduce two visitors at these meetings, on writing the visitors' names in a book to be kept for that purpose. The same visitors shall not be admitted more than three times during one session.

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* The following bye-law came into force last year:—

"That on and after November 1st, 1882, candidates for the Resident, Non-Resident, or Corresponding Membership of the Society, shall not be eligible unless they practise as Dental Surgeons, or are interested in the progress of Dental Surgery, and are also Licentiates in Dental Surgery, or qualified Practitioners of Medicine or Surgery; or possess such a Diploma or Degree, as in the opinion of the Council, will qualify them for the Membership of the Society."

Annual General Meeting.

The annual general meeting of the Society for the election of the officers and councillors, &c., shall be held on the evening of the second Monday in January every year.

Society's Transactions.

The Transactions of the Society, under the designation of 'Transactions of the Odontological Society of Great Britain,' shall be printed at such times and in such manner as the Council shall direct.

The 'Transactions' shall be presented to all resident and non-resident members of the Society, who have paid their annual subscriptions.

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

30, CHAMBERS STREET, EDINBURGH.

President—ANDREW WILSON, L.D.S.Edin.

Vice-Presidents.

W. B. MACLEOD, L.D.S.Edin. | JOSEPH HARRISON, L.D.S.Edin.

Treasurer—MALCOLM MACGREGOR, L.D.S.Edin.

Secretary—JOHN S. AMOORE, L.D.S.Eng.

Curator and Librarian—G. W. WATSON, L.D.S.Edin.

Council

DR. JOHN SMITH. J. A. BIGGS, Glasgow.
Dr. W. H. WILLIAMSON, L.D.S., Aberdeen.
JOHN MOORE LIPSCOMB, L.D.S.Eng., Kilmarnock.

Ordinary Meetings.—The Society meets on the second Thursdays of November, December, January, and February, and the 13th March.

EXTRACTS FROM THE CONSTITUTION AND LAWS.

Name and Objects.

The Society shall be named the "Odonto-Chirurgical Society," and shall have for its objects the Promotion and Diffusion of Knowledge in matters connected with Dental Surgery; the furtherance of communications on such subjects by Members of the Society; and otherwise to advance the interests of Dental Surgery as a branch of medicine.

Ordinary and Honorary Members.

The Society shall consist of Ordinary, Honorary, and Corresponding Members:

The Ordinary Members shall consist of Gentlemen practising as Dentists in Great Britain, and of Medical and Surgical Practitioners interested in Dental Surgery.

The Honorary and Corresponding Members shall consist of Gentlemen practising Dentistry in Great Britain, in the Colonies, or in Foreign Countries, and of retired Dental Practitioners in Britian, as well as such Medical or generally Scientific men as may have distinguished themselves in connection with Dental Surgery.

The Ordinary Members shall have vested in them the Government of the Society, and all cases not otherwise specified shall be decided by them by a majority of votes, by ballot, if required.

Obligations of Members.

No Members shall be permitted to advertise his profession, his modes of practice, or his charges, either in the public journals or by circular. They shall not be permitted to expose specimens of their work for public inspection, nor to carry on their practice in connection with any other business, nor to hold any patent relating to Dental practice, nor to conduct themselves in any way which the Society may consider derogatory to the Profession, so long as they continue Members of the Society. But Members who practice in towns other than in which they reside shall be allowed to intimate their visits; such intimations being subject to the approval of the Council.

Application for Membership.

Condidates for admission as Members of the Society shall be recommended by an Ordinary Member, and the recommendation seconded by another. After being approved by the Council, such recommendation shall be read to the Society at an Ordinary Meeting, and shall lie over to the next, when the Candidate shall be balloted for, when two-thirds of the Members present must be in his favour to secure his election.

Contributions.

Ordinary Members residing within a ten-mile radius of the city shall pay an Entrance Fee of One Guinea, and One Guinea of an Annual Subscription, in advance. All other Ordinary Members shall pay an Entrance Fee of One Guinea, and Ten Shillings and Sixpence of an Annual Subscription. All Annual Subscriptions to date from the 1st of March preceding the Candidate's admission.

MIDLAND ODONTOLOGICAL SOCIETY.

OFFICERS AND COUNCIL—1884.

President—THOMAS HOWKINS, M.R.C.S., Eng.

Vice-Presidents.

ADAMS PARKER, L.D.S., Eng | WILLIAM BARKLEY, L.D.S., Eng.

Editor of Society's Transactions. | THOMAS HOWKINS, M.R.C.S., Eng.

Sub-Editors.

ADAMS PARKER, L.D.S., Eng. WILLIAM J. WATSON, L.D.S., Edin.

Hon. Secretary. WILLIAM J. WATSON, L.D.S., Edin.

Auditors. LEWIS & ATTLEE, Chartered Accountants.

Council.

H. R. FRYER BROOKES, L.D.S.I.
S. F. CLARKE, L.D.S.I.
T. M. COTTAM, L.D.S.I.
F. DALLY, L.D.S.I.
R. M. HATCH, L.D.S.I.
HORATIO JONES, L.D.S.I.
HARPY OWEN, L.D.S.I.
RICHARD OWEN.
EDWIN ROBERTS, L.D.S., Glas.
J. W. ROBERTS, L.D.S., Glas.
J. E. SUTTON, L.D.S.I.
JAMES WILLIAMS, L.D.S., Eng.

EXTRACTS FROM THE BYE-LAWS.

Days and Place of Meeting.

The Members meet on the first Thursday in January, February, March, April, May, October, November, and December, in the Rooms of the Society, at the Medical Institute, Edmund Street, Birmingham.

Name and Objects.

This Society is called "THE MIDLAND ODONTOLOGICAL SOCIETY," and is strictly non-political in its character, being instituted for the elevation of the Profession by the promotion and diffusion of scientific and practical knowledge in matters pertaining to Dental Surgery, the encouragement of social intercourse among the members of the Profession and collateral Sciences, and the furtherance of the interests of Dentistry as a branch of General Surgery and Medicine.

Constitution.

The Society shall consist of members, corresponding members, honorary members, and associates.

(*a.*) The members shall consist of gentlemen legally entitled to practice Dental Surgery.

(*b.*) Corresponding members shall consist of distinguished gentlemen, practising as Dental Surgeons, residing in the Colonies of Great Britain or in Foreign Countries.

(*c.*) Honorary members shall consist of distinguished Dental Surgeons who have retired from active practice, and of Medical Practitioners whose names appear in the Medical Register; and of gentlemen distinguished in any department of science.

(d.) Associates shall consist of Dental students, articled pupils, and assistants.

Any gentlemen desirous of becoming a member of this Society must sign and deposit with the Secretary a declaration.

Subscriptions.

The subscription shall be for members, half a guinea per annum; for associates, five shillings per annum. The subscriptions to date from the day of election and from the first of January in each subsequent year, and shall be payable in advance.

Publication of Transactions.

A copy of all papers read before the Society must be deposited with the Hon. Secretary, in such form as the Council may from time to time direct. Such copy shall become the property of the Society, to be dealt with at the discretion of the Council, who shall form a Standing Committee to determine upon the publication and form of publication of the Society's Transactions.

Donations to the Society.

Any person who shall present books, money, specimens, or other property to the Society, shall be considered a benefactor thereof, and shall have his name and a description of the gift recorded in a book kept for the purpose. The yearly entries of such book shall be read at the Annual General Meeting.

Life Members.

A donation of ten guineas in one sum shall constitute a life member of the Society, subject to Bye-Law III., and the consent of the Council, the Donor being entitled to all the privileges of other members.

Visitors.

Each member or associate may introduce two visitors at these meetings, but the same visitor shall not be admitted more than *twice* in one year. All visitors must sign the Visitors' Book kept by the Secretary.

Annual General Meeting

The Annual General Meeting of the Society, for the election of Officers and Council, the alteration and amendment of Bye-Laws and other business, shall be held in Birmingham on the first Thursday in February.

The Property of the Society.

The whole of the Society's property and effects, of whatever kind soever, shall be vested in and placed under the direction and management of the Council, subject to the consent of General Meetings of the Society.

THE BRITISH DENTAL ASSOCIATION.

President—John Smith, M.D., F.R.C.S.Edin., LL.D. *President*, R.C.S. Edin.
Vice-President—J. Smith Turner, M.R.C.S., L.D.S.Eng.
President-Elect—Richard White, L.D.S.Eng.
Treasurer—James Parkinson, L.D.S.Eng.

Representative Board.

President—John Tomes, F.R.S., F.R.C.S., L.D.S.Eng.
Vice-President—J. Smith Turner, M.R.C.S., L.D.S.Eng.

For London.

Thos. Underwood, L.D.S.Eng.
J. Walker, M.D., M.R.C.S., L.D.S.Eng.
A. J. Woodhouse, L.D.S.Eng.
G. A. Ibbetson, F.R.C.S., L.D.S.Eng.
C. Vasey, L.F.P.S., L.D.S.Eng.
J. Oakley Coles, L.D.S.Eng.
A. Gibbings, M.R.C.S., L.D.S.Eng.
A. Hill, L.D.S.Eng.
F. Weiss, L.D.S Eng.
Thos. Gaddes, L.D.S.Eng.
S. J. Hutchinson, M.R.C.S., L.D.S. Eng.
T. A. Rogers, M.R.C.S., L.D.S. Eng.
Sir Edwin Saunders, F.R.C.S.
H. E. Sewill, M.R.C.S., L.D.S.Eng.
C. S. Tomes, F.R.S., M.A. (Oxon.), M.R.C.S., L.D.S.Eng.

For the Provinces

J. H. Brownlie, L.D.S.Eng., Glasgow.
W. Campbell, L.D.S.Eng., Dundee.
F. E. Huxley, M.R.C.S., L.D.S., Birmingham.
J. H. Longford, L.D.S.I., Dublin.
J. Manton, L.D.S.Eng., Wakefield.
J. O'Duffy, L.D.S.I., Dublin.
C. Sims, L.D.S.Eng. Birmingham.
T. Browne-Mason, L.D.S.Eng., Exeter.
H. Campion, M.RC.S., Manchester.
J. Dennant, L.D.S.Eng., Brighton.
T. Cooke Parson. M.R.C.S., Eng. L.D.S.Eng., Clifton.
J. Fenn Cole, L.D.S.Eng., Ipswich.
G. Cunningham, D.M.D. Harvard, Ipswich.
T. Mahonie, L.D.S.I., Sheffield.
R. Rogers, L.D.S.I. Cheltenham.
S. Wormald, L.D.S.I., Stockport.

Hon. Sec.—Frederick Canton, M.R.C.S., L.R.C.P.Lond., L.S.A., L.D.S.Eng.

Extract from Bye-laws.

4. A person who is registered in the Dentists' Register shall be eligible for election as a member of the Association, provided he be of good character; that he does not conduct his practice by means of the exhibition of Dental specimens, appliances, or apparatus in an open shop, or in a window, or in a show-case exposed to public inspection; or by means of public advertisements, or circulars, describing modes of practice, or patented or secret processes; or by the publication of his scale of professional charges.

5. Any registered Dental practitioner who can subscribe to a declaration (provided by the Association) embodying the preceding Bye-law, and who shall be recommended as eligible by any three members of the Association, may be elected a member by the Representative Board or by a committee appointed for that purpose by that Board.

BENEVOLENT FUND OF THE BRITISH DENTAL ASSOCIATION.

Chairman—John Tomes, Esq., F.R.S. (President of the Representative Branch).

Trustees.

Sir Edwin Saunders, London.
James Parkinson, Esq., London.
Richard Rogers, Esq., Cheltenham.

Treasurer—A. J. Woodhouse, Esq.

Committee of Management.

J. Dennant, Esq., Brighton (Vice-Chairman).
S. J. Hutchinson, Esq., London.
S. Lee Rymer, Esq., Croydon.
W. H. Waite, Esq., Liverpool.
Oakley Coles, Esq., Lon. (*Hon. Sec.*).

THE WESTERN BRANCH OF THE BRITISH DENTAL ASSOCIATION.

President—W. A. Hunt, L.R.C P., M.R.C.S. Eng.
President-Elect—G. C McAdam, L.D.S.Eng.

Vice-Presidents.

Chas. Gaine, M.R.C.S.Eng.
Richard Rogers, L.D.S.I.
G. Parkinson, L.D.S.E.
T. Cooke Parson, M.R.C.S.
C. Spence Bate, F.R.S., L.D.S.E.

Council for the Year, 1883-4.

E. Apperley, L.D.S.Eng.
F. H. Balkwill, L.D.S.E.
C. A. Hayman, L.D.S.E.
W. Helyar, L.D.S.I.
D. Watson, L.D.S.E.
W. R. Tuck, L.D.S.E.
H. Mallet, Esq.
A. G. Leivason, L.D.S.I.
R. P. Morrison, L.D.S.I.
T. W. G. Palmer, L.D.S.E.
G. B. Pearman, L.D.S.E.
Alfred Smith, L.D.S.I.
J. R. Bate, L.D.S.I.
W. V. Moore, L.D.S.E.
A. B. Verrier.
E. N. Washbourne, L.D.S.Eng.
F. Youngman, L.D.S.Eng.

Treasurer—J. T. Browne-Mason, L.D.S.E., Exeter.
Hon. Secretary—Henry B. Mason, L.D.S.E., Exeter.

A person who is registered in the Dentists' Register shall be eligible for election as a member of this Branch, provided he be of good character; that he does not conduct his practice by means of the exhibition of Dental specimens, appliances, or apparatus in an open shop, or in a window, or in a show-case exposed to public inspection, or by means of public advertisements, or circulars describing modes of practice, or patented or secret processes; or by the publication of his scale of professional charges.

Any Dental practitioner, who can subscribe to the conditions laid down in Bye-law 4, who has been recommended as eligible by any three Members of this Branch, may be elected a Member by the Council, and shall be admitted a Member of the British Dental Association.

THE SCOTTISH BRANCH OF THE BRITISH DENTAL ASSOCIATION.

President—John Smith, M.D., F.R.C,S., Edin.
Vice-President—Walter Campbell, L.D.S., Eng., Dundee.
Treasurer—J. Austin Biggs, Glasgow.
Hon. Sec.—W. Bowman Macleod, L.D.S.Ed., Edinburgh.

Council.

R. Reid, L.D.S., Eng., Edinburgh.
A. Smyth, Glasgow.
L. Jablonski Platt, Stirling.
J. Wood, L.D.S., Dumfries.
E. Wilson, L.D.S.Ed., Edinburgh.
E. Biggs, L.D.S.Ed., Glasgow.
P. Crombie, L.D.S.Ed., Eberdeen.h
M.Finlayson,L.D.S.Ed.,Edinburgh

Bye-laws—The Bye-laws are identical with those of the parent Association.

THE MIDLAND BRANCH OF THE BRITISH DENTAL ASSOCIATION.

President—J. Harrison, L.D.S., Sheffield.
President Elect—H. Blandy, L.D.S., Nottingham.
Treasurer—S. Wormald, L.D.S.I., Stockport.
Hon. Secretary—W. H. Waite, L.D.S.I., Liverpool.

Council.

H. Campion, M.R.C.S., Manchester.
E. H. Williams, L.D.S., Manchester.
Roff King, L.D.S.I., Shrewsbury.
T. Murphy, L.D.S.I., Bolton.
J. Renshaw, L.D.S.I., Rochdale.
G. Brunton, Leeds.
T. Mahonie, L.D.S.I., Sheffield.
L. Matheson, L.D.S., Manchester.
R. E. Stewart, L.D.S., Liverpool.
D. A. Wormald, L.D.S.I., Bury.
J. S. Crapper, L.D.S.I., Hanley.

Composed of Members of the British Dental Association who reside in the Midland and North Western Counties of England and of Associates who can fulfil the conditions laid down in the Bye-laws. The Annual Meeting takes place in April.

Extract from Bye-laws.

2. The Association shall consist of Members and Associates. No one shall be eligible for membership who is not already a member of the British Dental Association. Any registered Practitioner of good character, who does not conduct his practice by means of the exhibition of Dental specimens, appliances, or apparatus in an open shop, or in a window, or in a showcase exposed to public inspection; or by means of public advertisements or circulars describing modes of practice, or patented or secret processes; or by the publication of his professional qualification, or scale of professional charges, may be admitted as an Associate. Associates shall be entitled to all the privileges of the Branch Association, but shall not be entitled to vote, or hold office therein.

3. Any Member of the British Dental Association may be elected a Member of the Branch by the Council of the Branch, at any of their Ordinary Meetings, on his sending a written application for election to the Secretary of the Branch.

4. Any registered Practitioner who can subscribe to the conditions laid down in Bye-laws 2, and who shall be recommended as eligible by any three Members or Associates, may be elected an Associate by the Council, on his forwarding the recommendation and his subscription to the Honorary Secretary of the Branch.

THE EASTERN COUNTIES DENTAL ASSOCIATION.

President—Alfred Jones, Senior.

President Elect—R. W. White, Esq.

Treasurer—J. B. Bridgman, Norwich.

Hon. Sec.—W. A. Rhodes.

Council.

John Fenn Cole, L.D.S.Eng., Ipswich.
J. J. Musgrave, L.D.S.Glas., Lincoln.
N. Tracy, L.D.S.Eng., Ipswich.
R. W. White, M.R.C.S., L D.S. Eng., Norwich.
Alf. Jones, Cambridge.
W. Marsh, L.D.S.I., Colchester.
B. W. Harcourt, Norwich.
Frank Hall, Hertford.

Districts—Norfolk, Suffolk, Cambridgeshire, Essex, Lincolnshire, Northamptonshire, Huntingdonshire, Bedfordshire, and Hertfordshire.

Bye-Laws.—1. Any person registered in the Dentists' Register shall be eligible for election as a member of this Association provided he be of good character, that he does not conduct his practice by means of the exhibition of Dental specimens, appliances, or apparatus in an open shop or in a window, or in a show-case exposed to public inspection; or by means of public advertisements or circulars describing modes of practice, or patented or secret processes; or by the publication of his scale of professional charges; or by the assumption of any title, degree, or diploma not recognised by this Association.

2. Any registered Practitioner, not disqualified by any bye-law, who shall be recommended as eligible by any three members of the Association (one being from personal knowledge) may be elected a member by the Council, the election to be by ballot, three black balls to exclude.

THE STUDENTS' SOCIETY OF THE DENTAL HOSPITAL LONDON, LEICESTER SQUARE.

President—C. Truman, M.A., M.R.C.S., L.D.S.

Vice-Presidents.

A. E. C. Woodhouse, M.R.C.S., L.D.S.
E. Latchmore, L.D.S.

Treasurer—S. C. Buckland, L.D.S.

Hon. Secretaries.

F. N. Pedley, M.R.C.S., L.D.S.
R. W. Stainer, L.D.S.

Council—Messrs. W. R. Ackland; H. Parkinson; W. Norris; J. C. V Crocker; A. Bardet; W. J. England; J. O'Meara; C. Rilot; -. Campion

The object of the Society is the consideration of matters generally and specially appertaining to Dentistry. The affairs of the Society are managed by a Council consisting of a President, two Vice-Presidents, Treasurer, two Secretaries, and six other members. The President is chosen from the past Students who have obtained their degree of L.D.S.; the Vice-Presidents from past Students, with or without qualification.

Any gentleman wishing to become a member must be proposed and seconded at one meeting, and be balloted for at the next; one black ball in four to exclude. The entrance-fee for Ordinary members is half-a-crown, and there is an annual subscription of the same amount.

Ordinary meetings are held at 7 p.m. on the second Monday in every month, from October to March inclusive. The annual meeting for the election of officers, and other business, is held in Jannary of each year.

Every member has the power of introducing one visitor, not being a Student of the Hospital or school, to the evening meetings, with the consent of the President. Visitors are allowed to take part in the discussion of the papers and clinical cases.

There is a Library in connection with the Society, 'the Secretaries discharging the duties of Librarians.

The Council offer a prize, value £3 3s. at the end of each year for the best paper read before the Society during that year.

STUDENTS' SOCIETY OF THE NATIONAL DENTAL HOSPITAL AND COLLEGE.

President—H. G. READ, ESQ., L.D.S., ENG.

Vice-Presidents—
THOMAS GADDES, L.D.S. ENG. and EDIN.
W. R. HUMBY, L.D.S., ENG.

Treasurer and Secretary of the Council—FRED. BATE.

Secretary—FRED. C. WRIGHT (Society).

Council—Messrs. C. W. GLASSINGTON, L.D.S. Edin., M.R.C.S.; H. C. CARTER, L.D.S.I.; S. P. PENROSE, L.D.S., Edin.; MORGAN HUGHES, L.D.S. Eng.; C. F. WRIGHT, L.D.S.I.; H. KLUGHT.

This Society, which was established March 15th, 1878, was constituted for the encouragement and diffusion of knowledge in Dental Science, and for the promotion of intercourse among its members, and all Students of Dental Science-are eligible for Membership. All Candidates for Membership must be approved by the Council before being proposed to the Society for election. The Entrance Fee is 2s. 6d., and the Annual Subscription 2s. 6d., to be paid in advance. The Ordinary Meetings of the Society are held on the first Friday in each month, from October to March, both exclusive, at 8 p.m. precisely. Each Member may introduce two visitors, not being Students of the Hospital or College, but the same visitors may not be admitted more than three times during one Session.

VACANCY.

House Surgeon to the National Dental Hospital, 139, Great Portland Street, W. Applications, with testimonials, by Monday, September 29th, addressed to the Secretary.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From August 1st to August 31st, 1884.

Extractions	Children under 14	493
	Adult	972
	Under Nitrous Oxide.	306
Gold Stoppings		62
White foil ditto		6
Plastic ditto.		209
Irregularities of the Teeth treated mechanically		61
Miscellaneous Cases		99
Advice Cases		131
Total		2339

S. C. Buckland,
House Surgeon.

DENTAL HOSPITAL REPORTS. NATIONAL DENTAL HOSPITAL.

MONTHLY STATEMENT OF OPERATIONS PERFORMED FROM August 1st to August 31st, 1884.

Number of patients attended		1513
Extractions	Children under 14.	522
"	Adults	1028
"	Under Nitrous Oxide.	380
Gold Stoppings		46
Sheets of Gold used independent of Pellets		
Other Stoppings.		418
Advice and Scaling		219
Irregularities of the Teeth.		119
Miscellaneous		132
Total		2864

Wm. Todd Paterson,
House Surgeon.

ANSWERS TO CORRESPONDENTS.

Tyro—No, not until your name appears on the Dental Register.

JOURNALS RECEIVED.

New England Journal of Dentistry; Independent Practitioner; Ohio State Journal; Transactions of the Illinois State Dental Society; American Journal of Dental Science; Dental Practitioner; Dental Cosmos; Deutsche Vereins Zahnkunstlers; Archives of Dentistry; Items of Interest; Journal of the Pharmaceutical Society; Dental Advertiser; British Medical Journal; Progrès Medical; Syllabus of St. Bartholomew's Medical School; Syllabus of Middlesex Medical School; Syllabus of Nationrl Dental Hospital; Syllabus of London Dental Hospital.

ERRATA.

In Mr. Percy May's "Case in Practice," it should have appeared that the abnormal molars and the sympathetic deafness occurred in different persons.

British Journal of Dental Science.

No. 401. LONDON, OCT. 1, 1884. Vol. XXVII.

ADDRESS DELIVERED AT THE ANNUAL GENERAL MEETING OF THE BRITISH DENTAL ASSOCIATION AT EDINBURGH, 1884.

By T. Smith-Turner, President of the Association.

Gentlemen,—On taking the chair at this large, important and influential gathering, I need not express the sense I feel of the high honour conferred upon me by my election as President of the British Dental Association. In acknowledging the compliment thus paid me, I have to assure you that I shall do all that in me lies to discharge the duties and maintain the dignity of this distinguished office; and so far as my abilities permit, endeavour to uphold the honourable and eminent position which the Association has already attained under my able and illustrious predecessors in this chair.

The opening address by a newly-elected President at meetings such as these, not unfrequently partakes of a repetitionary character — a sameness of construction and identity of topic with those of past years—a ringing of changes on bygone addresses, necessarily engendered by the similarity of circumstances in which the successive speakers have, from time to time, been placed. Keeping this in view, and knowing that the time at our disposal in the present instance requires to be carefully economised, I shall not detain you by any lengthened reiteration of what has been so often and so admirably dwelt upon before.

The objects, the achievements, and the prospects of the Association are known to every one now present. I do not, therefore, propose offering any remarks upon the past, nor have I anything original to suggest in reference to the future. To enter upon the past would savour more of a valedictory than an inaugural address; it is for the retiring president to "cast a long and lingering look behind." For myself, in the meantime, "the world is all before me where to choose." Without, then, presenting to you any prolonged eulogium upon the beneficial purposes of the British Dental Association, upon the amount of good work it has accomplished, upon the great advantages it has conferred, and the important aims and ends it has in view, towards advancing and promoting the interests of the professional body it represents, I have simply, and on all these points, only to offer you the words of unqualified congratulation that such an Association exists and flourishes.

We are here to-day as the representative and supervising assembly, and, to a certain extent, as the administrative convocation for the dental profession throughout Great Britain; and, being so, I have no hesitation in saying that our influence in such a capacity is felt throughout the world.

It may be argued that we already have a dental act enunciating the laws regarding dental practice; that long before its existence we possessed at least one great dental school, and one great surgical corporation conferring on the students of that school a high and much sought after distinctive dental qualification; that at the present day we have many additional complete and reliable schools of dentistry, and a full and recognised dental qualification conferred in each of the three divisions of the kingdom; that over all these we have a court of supervision provided in the General Medical Council, and a safeguard and guarantee against illegal practice and pretenders in the Dental Register; and that, in the face of such a state of matters, little seems left for an association of this kind to do.

The answer, however, is, that by the various schemes referred to—the means and appliances—the machinery for education, examination, and qualification has been provided; but it requires some effective power to render such machinery available, and to ensure the work it is intended to perform being done, and that such work shall be done thoroughly; and, besides this, that an opportunity shall be afforded for the collective voice of the profession being heard on all the different questions it may hold to be important, that the interests and privileges of its members shall be effectively maintained, and that the laws provided for such purposes shall be enforced and be carried out in their integrity. These appear to be the functions and administrative duties of an association of this nature; and without some such representative vicarious authority as it constitutes, mere legal enactments are liable to become unexercised and of no avail.

While, however, this association has these important duties to undertake and to pursue for the profession, it has also a duty to perform to itself. It has to keep in mind the onerous responsibility for which it is liable officially to be held answerable in case of its actions being a failure—incurring unpalatable expenditure—or exceeding its functions or its powers. In cases of transgression, hardship, misdemeanour, what seems the correct and evident mode of action, may in the abstract, appear a simple matter to be put in force. But when this comes to a practical application in an exact and rigorous form, care requires to be exercised that no despotic over-riding of collateral and unexpected difficulties be attempted, rashly or indiscreetly, until these are met ; as it need not be said that any proceedings taken by the association or its representative board, are much more likely to be successful by waiting till the line before it be pronounced all clear and safe, than by rushing on at express speed with some danger signal flaring in its face. Precipitate impulsive measures have nothing to recommend them. A prudent exercise of caution and determination will no doubt by and bye make the association "a terror to evil doers and a praise and protection to those that do well."

But while one of the main objects of the Association is to act for and to exercise a certain amount of jurisdiction over the profession —purposes which, when judiciously handled by means of its executive, namely, the Representative Board, become a valuable and powerful element of control—the British Dental Association, unlike other purely governmental bodies, has reserved to itself the privilege of establishing and maintaining the means of promoting friendly feeling as well as scientific intercourse among its members. It has done so by the establishment of a Benevolent Fund, by it great statutory and ever acceptable periodic gatherings in different and distant centres of professional life throughout the country, and by the publication of a journal devoted to the literature of dentistry, and ever open to the communications of its practitioners. In these ways it not only acts as a powerful means of furthering the interests of the profession as a community, but serves to foster and facilitate the acquirements, the abilities, and the recording of the experience of every individual member composing it, according to the energy with which he may avail himself of the great and numerous advantages placed by it at his disposal.

It is, then, this great and beneficial association which I have now most cordially to welcome on the occasion of its meeting here in Scotland's capital—the city of Edinburgh. You are here as men pursuing and promoting the interests of science, faithfully forwarding the speciality to which your lives have been devoted. But I have to congratulate you, particularly the Southern strangers to our city, that such laudable pursuits have this year served a double purpose, and brought you to the "stately Edinburgh throned on crags." I need not remind you of the romantic history, the features of picturesque attractiveness and natural grandeur, the monuments of antiquarian interest, the footmarks of a former age of splendour and renown, possessed by the city you are now honouring with your presence. It is no mimic scene to which you now are introduced; no mere panoramic exhibition in which you now will walk. The actual scenes of old romantic legends and old associations will surround your steps on every side. A chequered history, broken as the memory of dreams, hangs over every shrine to which you may do homage. From the castle's rugged battlements and hoary towers, where kings were born and nobles pined and died, away down to deserted Holyrood, linked with the fate of Mary, fair but hapless Queen of Scots, and Prince Charles Edward, names as enduring as the time worn "Craigs" and Lion Hill, keeping their weird watch and ward high over all—there is scarce a quaint or tottering edifice but has its own most wild or woeful history.

At these, as at other kindred scientific meetings, it is customary, in addition to the business on hand, that organised excursions from the central rallying point should be arranged to radiate towards the different spots of interest around. Here this seems scarcely necessary. In many of our older cities of eventful and historic name and fame this is little needed; less perhaps in Edinburgh than in any of them all. From one or other of her heights the visitor, without once wandering outside the city bounds, may sweep the wide circumferance of the horizon she commands and scan around him scenes of legendary lore, zones of woods and hills and plains, the blue Firth and yellow sea-coasts, to the far off Highland mountains mingling with the clouds beyond. Within her walls again no lack of interest attaches to the older portions of the town. Every antiquated tenement, as has been already said, possesses its tradition. Almost every stone its sermon preached on texts of by-gone civil warfare, politics of Church and State, love, ambition, loyalty and crime; texts of feuds of lineage, feuds of State, feuds of creed; holy wars, fierce as sectarian hate could make them; old tales from which the Wizard of the North has drawn not a little of his wondrous store of rich material to enchant the world. There the Davids and the James's reigned; there every incident in the early and romantic annals of Scotch history, bore its fruit and stirred the doughty lieges. A long array of great historic names now low in the dust, once peopled the wynds and closes of that picturesque stretch of lofty habitations from where—

The castle holds its state
And all the steep slope down,
Whose ridgy back heaves to the sky,
Piled deep and massive, close and high,
Mine own romantic town.

These, I say, will, all in their own subordinate capacity, and in the event of time permitting, lend an additional interest to your meeting here, and while such relics of a bygone time suggest their own reflections, there is no want of more modern attractions in the Legal, Educational, Ecclesiastical, Medical and Charitable Monuments of interest throughout the city to wile away a leisure hour, and of which our Law Courts, our University, and our immense Infirmary may help to serve as types.

And now, Gentlemen, offering you these remarks, I shall not detain you longer, nor further interpose between you and the more interesting business which lies before this meeting of the British Dental Association in Edinburgh.

"PERICEMENTITIS."*

By Frank Abbott, M.D.

Mr. President and Gentlemen :—

I suppose you are all aware that at this season of the year, particularly, we are all very busy, consequently it has been impossible for me to write out what I expect to say to you.

Pericementitis, the subject upon which I am to speak this evening, is so often met with, and sometimes so very difficult to treat, that it becomes a matter of great importance to us as to what will assist in removing or allaying the disturbance. It requires, on the part of the practitioner, a full knowledge of pathology and therapeutics in order to diagnosticate and treat it successfully. It is inflammation of the pericementum (periosteum) which surrounds the root of the tooth, as it stands in the alveolus. There is probably no disease which gives so much annoyance to the dentist, and to the patient so much trouble, as this. We are asked, "Cannot something be done to relieve this severe soreness of my teeth ?" Not only is the patient in a condition of pain and distress, but the teeth are sore to the touch ; he is unable to masticate upon them with any degree of comfort. Chronic pericementitis is a condition that may be present, it is true, and the patient really not be aware of it, nor can it be detected by percussion with an instrument upon the tooth, nor by forcing it back and forward with the thumb and finger, still some such remote organ as the eye or ear may be effected. It is not an uncommon thing for a persistent facial neuralgia to develope, which may baffle the skill of the most astute of general practitioners of medicine, or an affection of the eye or ear which does not yield to treatment at the hands of Oculists or Aurists.

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* Lecture before the Central Dental Association of Northern New Jersey.

In order that we may understand more clearly this pathological condition, it perhaps would be well for us first to comprehend the tooth physiologically. It is necessary for us to know how the tooth is built up, in order to understand the disease, or the peculiar conditions, which we call pericementitis.

The pulp originally occupied the entire portion of the tooth now dentine. By the process of calcification the row of odontoblasts that was around the outer edge of this pulp soon became filled with lime-salts, and was converted into what I term dentine cells ; immediately inside of these formed dentine cells another row of odontoblasts is arranged and so on really as long as the tooth remains in the jaw and is alive. The crown of the tooth is first formed and subsequently the root.

In the formation of dentine, of course, the reticulum, which was living, still remains alive after the lime-salts are deposited. The dentinal fibre stops before reaching the enamel, and is either lost in a granular mass, or divided into two or three branches, in order to accommodate itself to a proper supply of the finer structure of the enamel. The enamel prisms are undoubtedly pierced with very minute fibres of living matter, as shown in the diagram, but as yet they have not been positively identified.

This portion of the tooth has, of course, a covering which is called enamel, and is formed by what is known as the enamel organ. Extending over the entire crown is an epithelial covering known as "Nasmyth's membrane." This thin membrane, by the friction of mastication and cleansing, soon becomes worn off, and the finely polished enamel is brought to view. This portion of the tooth is nourished entirely from the pulp, not only the dentine, but the enamel as well. When we come to the formation of the root, the enamel and the crown portion of the dentine having previously been formed, another element enters into the construction, viz., the cementum. This, in its construction, is the same as ordinary compact bone. It is the product of the pericementum, is attached to it and nourished by it.

The best analysis we have of the tooth is that the enamel possesses 3½ parts of organic material, and 96½ parts inorganic. In the dentine we have 28 parts or organic and 72 of inorganic; and in the cementum again we have 33 parts of organic and 67 inorganic. I give these figures not claiming that they are always the same. Undoubtedly we would arrive at a different analysis in each instance, finding a varying amount of the different materials of which a tooth is composed. The arrangement of the fibres of connective tissue of the pericementum is an interesting feature to the dental student. If you will examine this diagram carefully, you will observe that the ends of these fibres attached to the socket are towards the gum, while the ends attached to the root point towards its end, so that when the teeth are bitten upon, the fibres stretch and allow of a slight movement of the tooth. When the pressure is removed they contract again, and the tooth assumes its suspended position. Were the teeth placed in the jaws solidly, many more would be broken than now are. In enumerating the different causes of pericementitis, I presume I shall omit many, but I will endeavour to give the principal ones. They are as follows: Any organic disturbance of the dentine or cement; direct irritation of the pericementum; putrefaction of the dead pulp in the canal, or any portion that is left when extirpation has been attempted; putrefaction of the organic portion of the dentine; mercurial poisoning; uterine irritation during gestation or the menstrual period, and exostosis.

The usual organic disturbance of the dentine or cement usually involves caries. We remove this and seal the cavity, and thus prevent further irritation of the living portion of the organ, and generally no further trouble is experienced.

It is often the case, however, that the living tooth, when the neck becomes denuded, will cause the patient severe neuralgic pains and slight pericementitis. This may be relieved by the use of an alkaline solution, such as bi-carbonate of soda in water.

(To be continued.)

How to Restore "Dark" Teeth to their Proper Colour.—Mr. Arrington, writing in the "Dental Cosmos," says that he has for several years used dilute sulphuric acid with finely divided pumice or silex. He believes that this treatment is highly effectual in combatting so-called Rigg's Disease.

The Funds of the National Dental Hospital.—It is proposed, to give a series of dances at the Marlborough Rooms, during the months of October, November, December and January, in aid of the funds of this useful institution.

THE PREVENTION OF DENTAL CARIES.*

By Henry Sewill, M.R.C.S., L.D.S.

Summing up the knowledge which we possess as to the etiology and pathology of caries in the papers which I have recently contributed to the Journal of the British Dental Association, I found that there exists much more than enough of fact—anatomical, physiological, pathological, and experimental—to establish incontrovertibly the following truths with regard to caries.

Caries is a process of disintegration, commencing invariably at the surface, proceeding inwards, and due entirely to external agents; enamel and dentine are perfectly passive under this process, and manifest neither pathological action nor vital reaction of any kind. The predisposing causes of caries are, first, innate structural defects in the teeth, which render them more susceptible to the action of agents; secondly, all such diseases as are accompanied by vitiation of the oral secretions, or which tend to the formation or deposit of acid and the accumulation of products of decomposition within the mouth; and, thirdly, crowding and irregularity of the teeth, due to smallness and malformation of the maxillæ. The direct agents in initiating caries are acids, the products of chemical change and fermentation set up in fragments of organic matter which are commonly present in the mouth and lodged about the teeth. These acids are often assisted in their action by acid mucus secreted by unhealthy gums, acid saliva in some diseases, and acid eructated from the stomach in others.

For any useful discussion of my present subject it is necessary to state at the outset the fundamental facts upon which reliance is placed, enamel is the starting-place of caries, and with this tissue we are mainly concerned in studying the etiology of the disease. Enamel is a densely hard, almost homogeneous calcareous mass, containing not more then from 1 to 5 per cent. of organic matter. The enamel organ—that portion of a developing tooth from which enamel is formed—consists of epithelial cells, and it retains its epithelial nature throughout the process of calcification. The completed tissue results from direct calcification of the internal layer of cells. Vascular papillæ arising from the contiguous tissue of the dental sac penetrate to a slight depth the external layer of cells and convey nutriment to the developing tissue. On completion of the enamel these external cells with the vascular loops undergo atrophy and disappear. Dentine consists of a homogeneous calcareous matrix with a basis of fibrous tissue about 28 per cent. of the mass. It is permeated by minute tubes, occupied by fibrils which endow the tissue with sensibility, and which form the sole protoplasmic element in dentine. The bearing of these anatomical and physiological considerations upon my subject depends upon the obvious fact that enamel is totally devoid of any physiological mechanism whereby either vital or pathological changes could be brought about in it, and that whatever changes enamel undergoes are induced by external agencies. Not only is enamel not capable of intrinsic changes, but it is not in relation with any mechanism capable of influencing it from within. To believe in the possibility of nutritive changes in enamel we must first conceive some means by which this calcareous mass, devoid of cellular elements and incapable of imbibition, could assimilate nutritive material when conveyed to it; and we must next imagine the conveyance of new and effete material to and from the vessels of the pulp through the odontoblast layer of the pulp by way of the dentinal fibrils to its destination within the substance of the enamel.

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* Abstract of a paper read at the meeting of the British Dental Association at Edinburgh, Aug. 29th.

By the end of the twelfth work of intra-uterine life a cap of calcified material may be demonstrated on the pulps of all the temporary teeth. By the sixth month the first permanent molar has advanced to a similar stage of development. By the first month after birth the permanent incisors and canines are advanced to the same degree, and at the third year and twelfth year respectively, calcification has commenced in the second molars and wisdom teeth. It is usual to assume that ill-made teeth result from deficient supply of the lime salts which go to build up the tissues. We do not really know whether this is ever actually the case or whether the defect arises always or sometimes from other causes affecting the tooth germ, whereby it is prevented from undergoing the process of conversion; but be this as it may, we can perceive that it would be useless to attempt, directly or indirectly, by medical treatment to influence the formative process, to promote the production of enamel of good quality, after the lapse of the periods named in the different classes of teeth. The one dark spot in our knowledge of the remote causation of caries is found in the first predisposing cause which I have named; inherent structural weakness of the tissues. The dental tissues vary infinitely in strength in different individuals. We meet with well-made teeth, exceptionally it must be confessed, the sound enamel of which tries the steel of our best-tempered chisels; on the other hand, we encounter, and much more frequently, teeth the soundest enamel of which is throughout chalk-like in its softness. Between these extremes all varieties are to be found; and teeth of general defective character often present patches of surface, the enamel of which consists merely of an imperfectly united mass of granules. Similar defective spots are to be found here and there in teeth of better formation. Sometimes enamel fibres at parts are penetrated at their centres by minute tubes, thus making the tissue at such places porous. Defects in quantity are equally variable in extent. Honeycombed teeth have enamel full of small pits and fissures, and there is scarcely a set of teeth to be found in which, here and there, in one or more teeth, an isolated crack or cleft, a solution in the continuity of the tissue,does not exist.

Our knowledge, I repeat, of the origination of maldevelopment of the dental tissues is very incomplete. We know that vast numbers of individuals in highly-civilised states have ill-made teeth; and we know that the quality of the dental tissues varies very much in the different peoples. To instance a few nations in this regard, and to speak somewhat from my own experience, I should place the Scotch as a people in the first rank of dental development, after them I would place the North Germans, thirdly the English, then the French, and lastly the people of the United States. Among the last, I of course only refer to that part of the population native by sufficiently long descent; those upon whom the climate and other forms of evolution have set their mark. There is evidence, although not conclusive, that in all races of advanced civilisation, there has been in later generations, a notable further deterioration in dental development. To account for these circumstances, we have very few solid facts. One at the outset may be recorded—namely, that comparative disuse of the organs of mastication has led in civilised races to decrease in size and strength of the whole apparatus of mastication—jaws, muscles, and teeth. This fact has been quite recently demonstrated by Professor Flower. He shows, as a result of examination and measurement of many thousands of skulls, that there is a gradual diminution in the size of the teeth from the anthropoid apes, through the lower races of man to the European. He has constructed a perfect dental index, in which the average size of the teeth of the gorilla being represented by 50·8 and the Tasmanian by 47·5, the European stands at 40·5. It has been plausibly argued that progressive dental deterioration may be accounted for by the overwhelming demands upon the vital powers by the growth of the brain, and its increased exercise in modern life. The brain and the jaws are alike fed from the common carotid artery, and, it is urged, the demand for blood by the growing and working brain leads to imperfect supply of the masticatory organs. Again, dental deterioration has been ascribed entirely to improper and imperfect feeding of children, to insufficiency in the food of lime-salts, the proper pabulum of the developing teeth. If this were true, the whole osseous system—which is built up of the same chemical constituents as the teeth—must in every case be equally ill-constructed; it would thus be impossible to find a single individual with a solid skeleton, and such cases as so commonly present themselves, a massive bony system in conjunction with faulty dental tissues, would be unknown. Perhaps with one exception there is no modern people displaying general progressive physical degeneration likely to be accompanied by ill-developed teeth. But it must be recollected that there has been among the populations a constant augmentation in the numbers of the physically imperfect. Vast numbers of the phthisical, the scrofulous, the rickety, and the congenitally syphilitic, who would formerly have perished in childhood, are now by science preserved alive, and these imperfect types are all associated with faulty dental development. Least of all among the nations can the people of these islands be suspected of general physical degeneration. On the one hand no doubt, injury has been caused by the aggregation of great masses of the population in towns, the sanitation of which is imperfect, and in the employment of great numbers of men, women, and children in crowded, ill-ventilated factories. On the other hand, never before were the great bulk of the British so well sheltered, so well clad, and so well provided with food and the smaller luxuries of life ; never before was the public health so well cared for, and never before was there more freedom from diseases which leave their mark on the constitution, and lead to degeneracy in the descendants of their victims.

In discussing questions of evolution we must be on our guard against hastily drawn generalisations, and must recollect that vast periods of time are needed to work permanent changes. Admitting that deterioration of the apparatus of mastication and of the dental tissues has advanced in the present and in recent generations, we are not therefore to believe that this decadence is to continue. So long as mastication is an advantage to the race in making the man a better animal, it is absurd to suppose that the forces of evolution will go in the end to produce a toothless man. And the nations are not interfering improperly with natural forces nor retrograding in physical development. To this, however, I believe there is one exception. The French having adopted almost universally the practice of restricting population by artificial means, are preventing the action of those evolutionary forces, which, given fair play, ensure in the end the survival of the physically fittest as surely now in the nineteenth century as in the ages of primitive man. The French are carrying on what is really a gigantic system of artificial selection, and by ensuring the survival of the least fit progeny are producing a stunted inferior race. The physical deterioration of the French seems almost proved; but there is not evidence to show that their teeth are bad in proportion; and we must not forget a possible fallacy as regards the teeth. The French use their jaws less than any other nation; they are the best cooks in the world, and the whole population, without exception, lives upon the softest food, including bread of the most delicate manufacture. It is puzzling to observe that the teeth of the French are better than those of the Americans, who cannot be accused justly of adopting extensively those vices of civilisation practised by the French. These observations and contradictory facts are intended to show that the cause of dental deterioration—inherent structual weakness of the tissues—is extremely complex. We do not know yet what are all the factors which can possibly go to produce the results which we note.

When we turn from the general consideration of this subject to the narrower question of the association of defective dental tissues with particular diatheses, we find ourselves on firmer ground, and we may take a solid fact to start with—the fact that hereditary syphilis, which seems to interfere with the development of all the structures derived from the epiblast, leads also in many cases to imperfect formation of the tooth tissues. The amount of injury to the developing teeth depends upon the stage of the disease in the affected parent. It is, of course, most common for the father to be the subject of the disease. A woman pregnant by a man suffering from secondary syphilis of recent date will usually either abort in the earlier months or bring forth a dead child about the full term. As the virulence of the disease in the parent abates under treatment or by lapse of time, the mother begins to bring forth living children; these may perish early or may survive in accordance with the extent to which their constitutions are modified by the syphilitic poison. It is a fact, I believe, that only secondary syphilis is transmissible, and thus so soon as that stage in the parents is passed, children although often unhealthy, will not display signs of specific hereditary taint. In my experience the typical syphilitic tooth described by Mr. Hutchinson (and which must not be confounded with the merely honeycombed tooth), occurs only in children displaying the worst form of hereditary syphilis; but it by no means forms an invariable accompaniment to this condition. Indeed, I have been struck with the rareness of the malformation in children with unequivocal signs of syphilis. I reckon roughly I have not seen it in more than 1 per cent. of cases. I have observed, however, that in every child begotten of syphilitic parents, and even in those cases where no specific symptoms existed, the teeth, although often good in form and colour, have been of imperfect formation, the enamel soft and easily broken down. I have noticed, also, that the children's teeth were, as a rule, markedly inferior to those of the parents; and I am strongly of opinion that children begotten of syphilitic progenitors may often display inherently defective dental tissues as the sole sign of the attenuated taint. Considering that children of the third and fourth generations would inherit the dental characteristics of their parents, hereditary syphilis may be reasonably looked upon as one of the main causes of imperfect development of the dental tissues.

(To be Continued).

CLOSURE OF THE JAWS.

Dr. John J. R. Patrick, Belleville, Ill.

(*Continued from page 790.*)

During a thirty-five years practice in the Valley of the Mississippi, I have found the most common cause of this most distressing affection to be in profuse ptyalism, followed by the formation of inodular tissue. While all injuries, however slight, to the mucous membrane of the mouth, destroy the mobility of the jaw to a greater or less degree, there are few, if any, that come under the observation of the general surgeon but those extreme cases where the patients are unable to open their mouths or to masticate their food. Nevertheless there are cases continually presented for the consideration of the dentist, where partial closure of the jaws, has been produced by the formation of cicatrices, not only by ptyalism, but by the unskillful extraction of teeth, the wearing of badly constructed plates, alveolar abscess, and the many other injuries to which the mouth is subjected. In preparing mouths for the reception of artificial teeth, especially the mouths of some of the older citizens of St. Clair county, who lived during the period of the so-called calomel practice, I have frequently had to detach the cicatrized mucous membrane from the cheek or alveolar ridge before I could take a correct impression—or, at least, an impression from which to make a model and form a plate that could be worn with comfort in the mouth. In some cases which I have treated, the cicatrices had formed into numerous bands or strings, resembling the columnae carni of the heart, and while the jaws were not closed sufficiently to produce much inconvenience when devoid of teeth, the attempt to replace these organs by artificial means became exceedingly difficult, owing to the partial closure which brought the occlusion of the jaws in the regions of the molars so near, even when the mouth was put to its utmost stretch, that it was impossible to include the molar teeth in the set. The premolars, canines, and incisors, were ground very short and used to advantage; and in the course of a few years anterior teeth, with short molars, were substituted. A few years ago I had under my care a patient who had suffered severely from a decayed inferior left molar, and who had requested a friend, a practitioner of medicine, to remove it. After several violent attempts the crown gave way, and the roots of the tooth were suffered to remain. A few days after the accident inflammation set in, and at length suppuration followed. When I saw the case the cheek was swollen, and tumefaction extended under the jaw and down the neck, the elevators of the jaw partaking in the inflamed condition of the parts. The mouth was with much difficulty opened. I found upon examination very extensive ulceration on the buccal side of the jaw, extending from the second molar to the ramus; an abscess had formed and pus was oozing from it. Upon further examination I found a portion of the external plate of the alveolar process had been fractured and was now exfoliating. I removed the plate of bone, the fangs of the broken tooth, and the *dens sapientiœ.* This was three months after the accident. The patient passed from under my care, living in another county; but I was informed that the wound healed, and his mouth had assumed a healthy condition. In about one year after the operation the patient returned and complained of a stiffness of the jaw. Upon examination, I found that two well-defined cicatrices had formed, extending from the alveoli to the mucous membrane of the cheek, producing a marked depression on the cheek externally whenever the mouth was opened. The cicatrices I severed freely, dressing the wound by packing the sulci with cotton and glycerine, at the same time making a pad of cotton saturated with collodion to fill the space of the missing teeth and alveoli. The dressing was repeated until the parts were healed.

When we reflect on the number of teeth broken or extracted annually in a single community by the application of poorly constructed instruments, in the hands of persons wholly ignorant or bnt partially informed of the anatomy of the parts concerned in the operation, it becomes a matter of absolute wonder that there are no more injuries inflicted than there are. I will now present the case of Mrs. Elizabeth P——, from a few similar ones, being the one most suitable to illustrate the mode of treatment I have pursued to insure the mobility of the jaws.

History: Mrs. Elizabeth P——, of Mascoutah, Illinois, when ten years old was badly salivated; to such an extent that she lost the superior and inferior molars and bicuspids on the right side, together with portions of the alveoli in the same region. A few months afterward it was observed that the mouth was gradually closing and the cheek contracting, so that at the age of twelve, the jaws were firmly closed. At the age of fourteen some operation was performed, in which two molar teeth were removed from the same side, which gave but slight relief, when in a short time her jaws were as firmly closed as before. About this time she had removed the superior left lateral incisor, canine, and first bicuspid, and by this means was enabled to feed herself through the aperture with more substantial food. When about twenty years of age she again submitted to an operation, performed by an eminent surgeon of St. Louis, Missouri, but with no better results than the former operations, for the jaws slowly assumed their previous rigid condition. At the age of twenty-seven she underwent a third operation, with no better success, the cheek contracting and the jaws closing as before.

On the 16th of November, 1867, she came under my care, through the advice of her family physician, Dr. J. Harris, to whose co-operation in treatment during its progress and successful termination I am largely indebted.

Upon examination I found the elevator muscles on the right side atrophied from the want of use, and the adstriction of the jaw on the same side complete. The incisor teeth antagonized squarely, but were completely worn down to the gum, giving more space at aperture on the left side where the teeth were removed than if the upper incisors had overlapped the under in the ordinary way. She introduced her food through the aperture and between the molars on the left side, though much decayed, otherwise in a healthy condition, and had a slight lateral and vertical motion on that side of jaw, by which she was able to triturate her food. The commissure of the lips on the affected side was firmly united to the jaws, commencing at the margin of the gum at the canine on the upper jaw and at the site of the first bicuspid on the lower; forming a mass of unyielding inodular tissue, in which the labial or convex side of the canine had imbedded itself, or, rather, the cicatrix had accommodated itself to the form of the tooth. There was no perforation of the cheek, and no external marks of cicatrization. The cheek on the affected side was very rigid and much smaller than the left side. Passing a flat probe through and across from the left side, the adhesion was traced as far back as the anterior angle of the ramus. She was of a spare habit, a cheerful disposition, and her general health was and has been uniformly good.

Operation—February 6th, 1868. After drying the commissure of the lips on the affected side with a napkin, and stretching the upper portion so as to expose the attachment of the cicatrix at the superior right canine, I directed a spray of rhigoline from one of Codman and Shurtleff's atomisers until local anæsthesia was produced. Then with an ordinary dissecting knife, I divided or rather cut into the cicatrix in such a manner as to form a pocket about two lines in depth. This effected, I introduced a small roll of cotton saturated with carbolized glycerine, and firmly pressed it between and to the bottom of the wound and dismissed my patient (who lived some twelve miles miles distant) with instructions to repeat the dressing every morning, and return when the soreness had subsided. February 24th, patient returned, had experienced little pain or inconvenience from the operation, as the parts, though changed in their connection, had almost healed. Depressed the lower angle of the mouth. Used the rhigolene spray as before, and divided the inodular tissue at the side of the first inferior bicuspid, making a pocket of the wound, as before, to receive the dressing; packed the upper and lower wounds with the same dressing, and dismissed the patient with the same instructions. March 12th.—The previous incision slightly sore; no inflammation perceptible. The parts separate, and nearly healed, except at the bottom of the pocket, owing to the dressing not being pushed to the bottom. I prepared two thin silver plates, three inches long and six eighths broad, uniting them at one end by soldering, which forms a double inclined plane. Introduced the united end of the plates between the front teeth with some difficulty, and pushed it back obliquely to and between the *dens sapientiæ* of the left side. Then taking a thin wooden wedge, dusted with the pulverized silicate of magnesia, I slipped it between the two plates, letting it remain for a short time to overcome the contraction of the elevator muscles. The dilating power of this instrument is very great, and I prefer it to either Luer's or Mott's Dilators, inasmuch as it exerts an equal pressure along the whole line of the jaws; and in cases where the teeth are in good condition there is no danger of breaking or disturbing them; on the contrary, when the other dilators, or the simple wedge is used, the teeth are invariably broken or displaced.

Introduced a thicker wedge when the patient complained of pain in the region of the left temporal. Retained it in position one hour, then removed it to the right side, where it was permitted to remain for a short time. The incisor teeth separated one-fourth of an inch, but upon removing the plates and the wedge, the jaw gradually closed, the patient having no power over the depressor muscles from long disuse. Made another incision in the cicatrix on the upper side, using the same means and dressing as before; and directed the patient to use the plates and wedge continually.

March 29th.—Returned much improved, was able to depress the jaw a little, and had increased the distance between the incisors perceptibly with the use of the wedge and plates; and without them, she could separate the incisors one-sixteenth of an inch. The previous incision healed well and all was gained that had been separated. Introduced the plates and pressed in a thicker wedge, pressing it in further at intervals of half an hour, taking care not to use too much force. In the course of a few hours, the incisor teeth were separated three-eigths of an inch. Complained of crepitation and some pain in the temporo-maxillary region. Removed the plates and wedge. Froze the lower cicatrix with spray, and made another incision, dressing as before. Inserted two plates hinged together, so that at their point of unity the plates would be further apart than if soldered. Three sets of these plates, with the hinges increasing in thickness, are required, in order to correspond with the entering points of the increased thickness of the wedges. Between these plates I thrust a wedge of caoutchouc or India-rubber, and instructed the patient to keep them in the mouth as constantly as possible, to shift it from side to side alternately, when either side became exhausted. April 4th.—Patient sent for me, the rubber and plates had not been used for twenty-four hours.

The temporo-maxillary region slightly swollen and stiff, deglutition somewhat painful. Ordered rest until the inflammation subsided. Made an incision on the upper side, and dressed as before. Instructed the patient to use the rubber and plates cautiously a little every day. April 30th.—Mouth very much improved, crepitation gone, able to open the mouth nearly half an inch without assistance. Removed the remains of an inferior right molar, which was partly surrounded and nearly covered with indular tissue. Cut through the cicatrix dressed as before, giving instructions to use the rubber and, plates. May.—During this month I operated three times, by dividing the cicatrices above and below alternately with uniformly good results.

(To be continued.)

THE ETIOLOGY OF DENTAL DECAY.

By Geo. Watt, M.D., Zenia, Ohio.

(Continued from page 798.)

A paper, that has attracted some attention on both sides of the water, was read before the International Medical Congress, 1881, by Arthur S. Underwood, D. S., and W. J. Miles.

I regret the necessity to differ with such careful and such distinguished observers; but truth is truth, and men who, from their learning, have a right to exhaust the alphabet in the display of titles, may be mistaken on very small matters. Their paper has been variously published, but I am using it as it appears in the Journal of the British Dental Association, where I first noticed it. It seems to require only moderate attention to see that these brethren have not clear ideas as to the "chemical theory" of decay. For example, they say, "With regard to the purely chemical theory, we cannot accept it as wholly satisfactory for the following reasons." Now I doubt if any educated dentist accepts the *purely chemical* theory, ignoring organic or physiological conditions as predisposing causes.

But a consideration of their reasons for non-acceptance shows a decided lack in their understanding of the so-called acid theory. They say: "1. Because the destruction of dentine, effected by the action of acids alone, under a septic condition, does not resemble caries, either in colour or in consistency, it being colourless and gelatinous, the process uniformly attacking all parts of the surface."

They refer to the useless experiment which our boys used to call "tooth-pickling." Putting dentine to soak in, say hydrochloric acid, the lime salts will be dissolved, and the gelatin will be left. But the acid, is quiescent, and not, therefore, in the condition necessary for the imitation of caries. They are enveloped by the same cloud which overshadowed Prof. Spalding. In their third reason they gravely tell us: "Further, our own flasks shows that malic and butyric acids with saliva in a meat infusion, have not, under aseptic conditions, produced caries." Most certainly not; for these acids never did, and never will produce dental caries under any conditions. Chemical action is definite; and where but a few reactions are observable, as is the case in caries, but few, and just as few, reagents are concerned in their production, and butyric and malic acids are not two of them. They say, too, in this connection, "that acids alone do not destroy a living tissue;" and they apparently try to enforce the statement by the remark, "that the stomach is not digested by its own acids until it has been removed from the body." But they surely do not mean to include sulphuric nitric, hydrofluoric acids, and the like, in their statement that "acids alone do not destroy a living tissue."

I will quote their fourth reason in full, and think it is plain that their inferences are not legitimately drawn, while the closing remarks show that they have no true idea of the position held by the advocates of the acid theory. They say: "4. Lastly, we would urge that, when caries occurs in the mouth, it is always under circumstances more favourable to the action of germs than to that of acids. There is always, first of all, a minute pit or haven where germs can rest undisturbed and attack the tissue. We cannot, upon the purely acid hypothesis, explain why the same acids that originally caused the decay, gaining access through some minute imperfection of the armour of the enamel, do not in the same mouth, or under the same condition, attack the wounded enamel at the edges of the filling. The germs cannot rest there, they are constantly washed away if the surface is fairly smooth; but the acids literally bathe the part except during the performance of the act of mastication, when the alkaline parotid and sub-maxillary saliva neutralizes their action."

Now can any one believe that "a minute pit or haven" is a better place for the devolopment of germs than for the formation of acids? And the germs are always washed away from the edges of the filling while "the acids literally bathe the part." Why do not the germs "stick in their holders," as the Irishman did when trying to ride the mule? They need not be washed away if they are like Prof. Mayr's little pets, able to crawl through the holes in normal enamel. (But they do that just to show Prof. M. how small a hole can be crawled into rather than give up a favourite theory.) Their allusion to the acids bathing the parts shows that they have not caught the first idea in the acid theory of decay. They are bemixed in the slough of quiescent acids, with Prof. S., whom we quoted at the outset. But if a nascent acid is to cause caries, it needs the "minute pits" for its development more than do the germs. It is very difficult to form, either by synthesis or analysis, a nascent acid at the junction of a well-finished filling with the border of the cavity.

But having got thus far, these gentlemen find their progress arrested, unless they come over to the acid theory. Hear them: "Most probably the work of decalcification, is entirely performed by the action of acids, but these acids are we think, secreted by the germs themselves." "*We think*," is good. But what acids do the germs secrete? Chemical action is definite, and but three or four kinds of "decalcification" occur in dental caries.

Time and space will not allow a notice of all the points assumed by these brethren. Let me notice one item or two in their summary. They say: "1. We consider that caries is absolutely dependant upon the presence and prolification of organisms. That those organisms attack first the organic material, and feeding upon it, create an acid which removes the lime salts." First they beg the question—at least we may claim the Scotch verdict of "Not proven"—and then they *guess* the little bugs, create an acid.

Well, what acid? In the experiments, occupying over ten years, with results reported nearly a quarter of a century ago, I was not content to guess at the acids. True, in the most common variety of dental caries I did not find hydrochloric acid dissolving the subphosphate and decomposing the carbonate of lime, for, the acid being nascent, each atom was saturated as fast as formed; but I did show chloride of calcium pressed out of the softened organic matter remaining in the cavity, and precipitated bone phosphate from solutions obtained from similar cavities. If I didn't exhibit the dragon I showed his tracks. And instead of the organic matter being first attacked, as those brethren claim, much of it is often found in the cavity, and so little disturbed as to distinctly show its organic structure. And Prof. Mayr, finding the lime salts present in an entirely different form of caries, does not in the least contradict this statement.

Further in their summary they say: "2. That suppuration of the pulp and its sequelæ, such as alveolar abscess, depend also upon the successful working of organisms."

This claim is now common, and was made, in noticing one of the *Ohio State Journal's* Specials, perhaps, by Prof. Mayr, he going so far as to claim, if my memory is not treacherous, that no one had ever held that such action could originate except through the action of germs. The position is held by many of my friends, and by distinguished men for whom I have the highest respect; but they are in error nevertheless. This may appear from various considerations, but first look at the following: The *British Medical Journal* not long ago said this; "A contribution of great importance will be be found in the October number of Virchow's *Archiv.* Dr. Uskoff, of Cronstadt, has made experiments which appear to prove that suppurative inflammation can occur independently of micro-organisms. He injected small quantities of distilled water, milk, oil, pus and turpentine into the subcutaneous cellular tissues of dogs, and examined the tissues microscopically a few days later. He found that the injection of bland fluids, such as water and milk, caused no suppuration, provided that only a gramme or two was injected, but that large abscesses formed when several grammes were introduced. The injection of turpentine, especially when not diluted with oil and carbolic acid, produced, in most cases, large abscesses, containing pus, which was entirely free from micro-organisms. From this, Dr. Uskoff concludes that, although micro-organisms may, in many cases, be the proximate cause of suppuration, morbid process may exist entirely independently of them, being due to chemical irritation, as when turpentine is used, or to damage of tissues, as in cases where a considerable amount of water is forcibly injected. We intend shortly to refer, at a greater length, to this important subject."

Few stand higher than does Dr. Uskoff as an experimenter and close observer. Years ago, without any knowledge of other researches in this direction, the writer very carefully conducted a series of experiments, with direct reference to this subject, which fully confirms the conclusions arrived at now by Dr. Uskoff. The record of these experiments, conducted mainly at No. 55 West Seventh street, Cincinnati, was destroyed by accident. In many of them I had the counsel and assistance of the late Prof. Thomas Wood, whose name is a guarantee of accuracy.

I had also the co-operation of the Prof. W. H. Mussey, who, although quite too busy to give immediate personal attention, gave most valuable suggestions as to the methods of conducting the experiments, especially with reference to securing aseptic conditions of the appliances used. The hypodermic instruments used were rendered aseptic partly by heat, and partly by carbolic acid, etc. Distilled water and other agents, free from micro-organisms, were introduced into both cellular and muscular tissues of human beings, dogs, etc.; and when it was ascertained that suppuration had taken place, aseptic conditions being still observed, with the hypordermic instrument, pus was drawn out and found entirely free from micro-organisms. This is but a flimsy account of the experiments of Prof. Wood and myself. And while I have never made a claim to be an expert with the microscope, still I think I could see a beetle or a June-bug, if in full view. But Prof. Wood had few superiors in this line. Had it not been that his native modesty held him back, he would have been recognized according to his merits. It is more than gratifying to find the researches of Uskoff confirming the teachings of our experiments of 1867 and 1868, which I have repeated, as opportunity served many times since, and usually when on human subjects, taking the precaution to seal up the orifice made by the hydodermic point with collodion. Prof. Wood and his son are both dead, and it is not probable any notes of these experiments can be found among his papers; and I am not sure that he took notes of them. He took none in our nitrous oxide investigations, relying on his very tenacious memory.

If I had not implicit confidence in the testimony of these experiments, they would not be here referred to, and though it is a delicate subject, you will allow me to allude to the fact that my physical disability has given me ample leisure to experiment, and a few of you know that the time has been mproved.

THE MAINTENANCE OF HEALTH AMONGST THE PRACTITIONERS OF DENTAL SURGERY.

Discussion upon Mr. Oakley Coles' Paper, read before the Odontological Society of Great Britain.

The President having invited discussion, remarking that the subject was one which had an interest for all, and he expected that nearly every one present would have something to say about it.

Dr. George Field said he had had some experience of bad health, and should be very glad to find a means of escaping it in future. He thought that the fact that dentists as a rule worked in a room having a northern aspect, was one element affecting their health; they did not get enough sun. For the last four years he had worked under a south-west aspect, and he believed he had been the better for it; the light was somewhat changeable, but he did not find this a serious objection. It was all very well to advise shorter hours of work, but in order to do this the practitioner must obtain higher fees; five or six hours' work at the customary fees would produce only bare subsistence. It was certainly desirable to shorten the hours of work, but the only way in which this could be done was by every practitioner doing his best to raise the appreciation of professional services in the estimation of the public. It was impossible altogether to do away with the insanitary conditions under which dental practitioners were obliged to work, but a great deal might be done by careful attention to ventilation, and Mr. Coles' suggestions on this head were excellent. He himself was accustomed to work with an open window whenever the weather would permit. Lastly, there was the question of exercise, and as to this he would suggest to those who had not tried it, a remedy which he had found eminently beneficial in his own case, viz., the use of a tricycle. He found that even after a hard day's work he could do two or three hours on his machine, and return invigorated by the fresh air and exercise.

Mr. W. E. Harding (Shrewsbury) said the reference to the use of a stool by Mr. Coles induced him to state his own experience on this point. He had formerly been in the habit of always standing at his work, and being tall, he suffered severely from pain in the back, caused by stooping. At last he got a Lyons stool, and he now did about half his work sitting, and found it a very great relief.

Dr. Field said he had been accustomed to sit at his work for some years past, but instead of the Lyons stool he used what was called a "shooter's walking-stick," which was very light, easily adjustible, and permitted great freedom of movement to the body. It was the best contrivance of the kind with which he was acquainted.

Mr. R. H. Woodhouse remarked that Mr. Coles had done his best to make every one feel uncomfortable and imagine themselves destined for an early grave, but for his own part he did not think that the disadvantages under which dental practitioners laboured were quite as serious as Mr. Coles had made them out to be. It was true that their work during the day was fatiguing, but then, unlike the majority of their medical brethren, they had the advantage of an unbroken night's rest, and as one of the rules for the maintenance of health he would suggest *early hours.* The plan of living away from one's place of business was a good one, as it entailed a certain amount of exercise in going to and fro. It was true also that they often had very disagreeable patients to deal with, and if there was any truth in the modern theory that consumption was contagious, the fact that they not unfrequently had to operate on persons affected with this disease must be held to entail a very serious risk upon the operator. There were, however, several members present who had been engaged fifty years and upwards in the practice of the profession, and who did not look much the worse for it. This seemed to indicate either that the dental was not such a very unhealthy profession after all, or that these gentlemen had discovered some means of counteracting these adverse tendencies. He should be glad if they gave their fellow practitioners the benefit of their experience.

Mr. DENNANT (Brighton) thought they were indebted to Mr. Coles for introducing so practical a subject for discussion, and for having thrown out many valuable suggestions with reference to the maintenance of health. He had himself suffered much from what their medical friends were learning to call "the Dentist's leg." About two years since, the pain became unbearable after standing three or four hours, resembling very much the application of scalding water to the outer part of the thigh, in the region of the external cutaneous nerve. It seemed to be due to nervous exhaustion due to the undue strain thrown upon the part. Medical advisers and common sense suggested rest as the remedy, and this he secured by the use of the Lyons stool. He had used this for about two years with great benefit, and could now get through a day's work in comparative comfort. Having a rheumatic diathesis, he is still reminded of his weakness in damp weather, but was much better in this respect than he at one time expected he should ever be. He would strongly urge all young practitioners to learn to operate in the sitting posture and adopt it when practicable; he only regretted that he had not done so earlier.

With reference to what had been said about the risk of operating on phthisical patients and those with offensive breath, it might be useful to describe a simple practical contrivance which had been suggested to him by a brother practitioner. It consisted of a disc of talc about 3 inches in diameter, with a hole pierced in the centre in which a light wooden stem about 2 inches long was fixed. This was held between the teeth; the mouth and nostrils of the operator were thus protected, and the comfort of the patient was also secured in those special cases where close proximity of the two faces was necessary.

Mr. Charles Tomes remarked that Mr. Coles had enumerated a long list of points to which attention should be paid by practitioners who valued their health, but there was one point which he had not mentioned, though it appeared to him (Mr. Tomes) a matter of some importance. He referred to the tendency most persons had to hold their breath when they were doing anything difficult. This was a bad habit, since the irregular breathing threw an increased strain upon the heart and embarrassed its action. This was a matter which was entirely within the control of the individual; it was quite easy to train oneself to breathe regulary under all circumstances, and he thought it was quite worth while to take the small amount of trouble necessary to overcome the tendency to which he had referred.

Dr. St. George Elliott said it was all very well to complain of patients with bad breath, but he believed that nine out of ten dentists would be found to suffer from the same infirmity, and therefore the patients required to be considered in this respect as well as the practitioner. He attached great importance to having a good large operating room, and having it thoroughly well ventilated. He quite concurred in what had been said as to the relief afforded by sitting, but instead of a stool he had a swing seat attached to the centre of his Wilkerson operating chair. This could be pushed quite out of the way when not in use, and he found it a very convenient arrangement.

Mr. W. H. Coffin said some of the speakers had advocated working in a south light; he could only say that his father had tried this plan for two years and had greatly injured his sight by it. If it could be had, a north-west aspect was the best, and next to this a north light was the most desirable. The light might be increased, when necessary, by means of reflectors. The walls of the room should be carefully toned with some neutral tint, and the napkins also should not be of the dazzling whiteness which was generally considered proper. The feet should be kept warm by wearing thick socks and having a rug to stand on; the clothing should be light, but warm. The operator should learn to breathe regularly through the nose. By attention to such details as these much might be done to counteract the undoubted disadvantages of a dentist's daily life.

Mr. Browne-Mason remarked that he was in the habit of operating under a south-west light, and had not found that any harm resulted from it. It gave him the advantage of being able to work an hour longer in winter.

Mr. Hutchinson said he thought most practitioners were of opinion that north-west, or to speak more accurately a north-north-west, light was the best for their work. With regard to general rules for the maintenance of health, he believed the chief were, to make a good breakfast before beginning the day's work, to have free ventilation without draught, to have some light refreshment in the middle of the day, and not to go home and sit down tired to dinner, but to rest half-an-hour first. As to exercise, he knew of nothing better than the tricycle; only too much must not be attempted, especially at first. If used with discretion, it would be found to do a great deal of good.

Mr. James Parkinson said that Mr· Woodhouse had called upon the senior members present to give the juniors the benefit of their experience, but although he had been in practice over fifty years, he had very little to say about the maintenance of health. He had never followed any particular rules or taken any special precautions. When he felt out of sorts he took a rest, and although he had stood over some very disagreeable mouths, he had not suffered from any infection.

Mr. Charters White said it was all very well to suggest exercise, but he found that after he had been standing all day he had no legs to walk with, and was glad to sit down. He always stood at his work, and suffered very much at times from pains in the back in consequence. Tricycle exercise he had not tried. He tried to get a rest and some lunch in the middle of the day, but patients had a disagreeable habit of coming just at that time, saying they thought they should find you disengaged. With regard to spittoons he found sanitas water the best thing to keep them free from smell.

Mr. Oakley Coles said he was very pleased that his paper had elicited such a general discussion, the point to which he had attached the greatest importance had scarcely been touched upon. His argument was that dental practitioners were not justified in ruining their health by long hours and harassing work. None of those present might have found any ill effects, at all events as yet. Unfortunately those who were so suffering were *not* present, but he could at once give the names of nine or ten men within his own circle of acquaintance who had broken down in health from this cause. And besides these there were many who suffered from constant dyspepsia and other minor ailments as the result of overwork and worry. Mr. Parkinson was a man of robust physique, and he had also the good sense, when he did not feel up to work, to give it up; but every one could not do so, and of those who could many went on working in spite of failing health. He had not concerned himself with those who were exceptionally healthy, but with the best means of conserving the forces of those who were not very strong, but who by the exercise of a little common-sense and management would be capable of doing a much larger amount of useful work than, for want of this care and forethought, they usually did do. With regard to Mr. Tomes' remarks, he fully admitted the ill effects of the habit to which he had referred; but he could not agree with him that it was easy to overcome it; at all events he had never been able to do so in his own case.

The PRESIDENT then proposed a vote of thanks to Mr. Coles, Mr. Charlesworth, and the other contributors of the evening, which was carried with applause, and announced that at the next meeting, on November 3rd, Mr. Newland Pedley would read a paper on "Fractures of the Jaw."

MR. TURNER added that he very much regretted the absence from the meeting that evening of a member who had for twenty-four years past taken an active part in the management of the Society, and been a constant attendant at its meetings. Mr. Coleman was about to leave England to seek a more favourable climate in New Zealand. He was sure all present would join in wishing him renewed health and vigour in his new home.

The Society then adjourned.

CLINICAL STUDIES ON THE COMPLICATIONS OF THE ERUPTION OF THE TEETH IN MAN.

BY DR. MAGITOT.

(*Continued from page* 835.)

WE are able to foretell in a general way the complications incident to the third period of dental eruption. They consist, according to the authors:

1° In various perturbations resulting from accidental disturbances in the reciprocal relations of the jaws and the parts of the dental apparatus—deviations in their seat and direction. These perturbations comprehend a large class of lesions, which belong to teratology and have been studied elsewhere.

2° In disturbances purely local, and resulting from the eruption of the permanent teeth in place of the pre-existing temporary teeth.

3° In more remote disturbances either sympathetic or reflex.

We have to speak here of the two last categories only. Local complications consist essentially in inflammatory disturbances —that is to say in the production of gingivitis variable alike in intensity and in character. In the majority of cases we may mention that this double phenomena of the fall of the milk teeth and of their replacement, is accomplished without any disorder either of the mouth or of general health. But it happens sometimes in infants, debilitated or cachectic that it occasions a congested state of the mucous membrane. In some few cases, a slight deviation in the axes of the two teeth is produced, the appearance of the second increases the resistance of the first, and produces a local gingivitis generally without serious results, and which ceases as soon as the fall of the temporary tooth is accomplished. In the normal eruption, the teeth appearing in symmetrical pairs, this disturbance, if it occurs is trifling and may even escape notice; but if several groups of teeth are simultaneously evolved, there is considerable uneasiness in the performance of the functions of the mouth, very apparent inaction in the corresponding region resulting in deposits of mucous and tartar the presence of which becomes the fresh cause of gingivitis. It is in such circumstances that the affection takes sometimes an ulcerous form, of which we have already spoken in a preceding paragraph, and merges into the state described by doctors under the name of "Infantile Ulcerous Stomatitis." We find here a new cause of that form, whose etiology remains still obscure. It is complicated also in individuals already pre-disposed by the phenomna fluxions and adenitis sometimes so intense and so lasting as to aggravate these ulcerous symptoms.

We have not here to describe the treatment of gingivitis, but we ought to mention a special practice designed to combat rapidly with disturbances in cases of this kind. This practice consists in the ablation *pur et simple* of the temporary tooth, in order to leave a place free for the permanent one. This little operation, which is applied to a tooth generally already loose, is distinctly indicated, and is very simple besides having the advantage of freeing the permanent tooth from the obstacle which it encounters, and has also the effect of causing a slight hemærrhage favourable to the depretion of the mucous membrane and the neighbouring parts.

As to those more remote complications which may be referred to the period of eruption, we acknowledge that we have never observed such as can be undoubtedly traced to this mechanism unless there were present feverish symptoms and general disturbance, which would account for the intensity of the local state.

IV.

COMPLICATIONS OF THE FOURTH PERIOD OF DENTITION (ERUPTION OF THE FOUR SECOND PERMANENT MOLARS FROM 11 TO 12 YEARS).

The complications possible to this new phase, are identical in all points with those of the second period, with regard to the eruption of the first four molars, which appear in the course of the 5th year. They are less frequent, and above all not so acute, which is the result of the tooth's volume being less, especially in our white races, where the series of molars as we know presents a decreasing size from the first to the third. We have only to point out here local disturbances, gingivitis, whether it be simple during the elevation of the mucous membrane, or phlegmonous, when it has encountered violence on the part of the opposite tooth, or ulcerous as in the specified cases.

V.

COMPLICATIONS OF THE FIFTH PERIOD OF DENTITION (ERUPTION OF THE FOUR LAST MOLARS FROM 18 TO 25. COMPLICATIONS OF THE SO-CALLED WISDOM TEETH.

We approach now the most serious and complex of pathological subjects—subjects which have given rise to a considerable number of works and studies. If the designation, "critical epoch," attributed in a general way to dentition, does not apply especially to the periods which we have passed in review, it is certainly applicable to this fifth period of dentition on account of the long train of all manner of disorders, and of the gravity of those complications, which is sometimes such as to place the patient's life in imminent danger.

A. HISTORICAL AND GENERAL.

From a historical point of view, the complications of the eruption of the wisdom teeth have been pointed out for a long time. Since the 16th century, Urbain Hemard, commenting upon certain facts, cited by Pliny and d'Avicenne, gives an account of acute sufferings occasioned during the eruption of this tooth by the tension and inflammation of the gum, and quotes from the personal experience, of his contemporary, Vesalius, who had suffered and described complications of this sort.

Ambrose Paré, so experienced an observer in all that concerns questions relating to the teeth, is, however, silent upon this particular point. It is the same with Fauchard who wrote towards the middle of the 18th century.

Hunter limits himself to pointing out some lesions of the mucous membrane at the time of this eruption. But it is Jourdain, in 1778, who distinguished the first of the complications of this period, as lesions of mucous membrane and as bony lesions properly so called.

It is necessary, however, to refer to Toirac to find the first perfectly circumstantial description and rational therapeutic directions. From this time, the number of publications upon this subject becomes considerable. The majority of authors who write on the diseases of the mouth giving a particular description are the following: Lefranc, Velpeau, Robert, Nélatin, the authors of the "Compendium of Surgery," &c., and among foreigners Lœwenhardt, Albrecht, Weber, Wedl, from Germany; Salter, Holmes, Tomes, in England. And more recently; we find a considerable number of theses sustained by the Faculty of Paris. Let us quote among these those of Chevassu, 1873, of Reynard (the same year) of Comoy (1876), d'Arnulph (1876), of Pielkiewicz (1876), of Beal and Guyot (1876-78). The two last treat especially of a particular complication of the eruption of the wisdom teeth, that is to say, of the narrowing of the jaws; a complication which other authors treat in their turn from the surgical point of view. Among such are M.M. Sarasin (thesis 1855), Boisson (thesis 1878), Duplay, Richet, etc.

To bring this list of names to a close, let us point out the remarkable thesis of M. Heydenreich in which the history of the complications of this eruption is traced in a masterly manner.

The complications due to the eruption of the wisdom teeth are at the present time classed within the nosological system and form a group of divers lesions springing from the same cause. But before viewing the mechanism and pathogenesis of these complications it will be necessary to say one word upon the anatomical and physiological conditions which are characteristic of, and which prepare the way for them. We have seen that the preceding period of eruption, that of the four second permanent molars (12th year) is generally effected without any disorder, the place reserved for their evolution being more than sufficient. As soon as this eruption is completed, the dental formula composed entirely of permanent teeth is raised to the number 28 and may be thus represented:

This formula 28 is kept up in certain subjects, about 10 per cent. throughout the whole life of our populations among the white races, which proves the atrophy of the four germs of the wisdom teeth. It is not the same as we descend the scale in the human race where this congenital absence of the wisdom teeth is a fact relatively rare. This phenomenon is also a corollary of another ethnic fact which is prognathism, which shows in the descending gradation of races a corresponding progression. Now as we have many times sought to bring to light the law which assigns to the dental evolution, the essential part in the development of the jaws, it results, necessarily, from thence, that if the maxillary at the end of the 12th year ceases to grow in length, it is that the last molar by its atrophy or by the extreme slowness in its development ceases to impress upon the bony tissue the physiological impulse necessary to its growth.

It is in fact very easy to recognise that when the eruption of the second molar is finished that these often come in contact by their posterior face with the base of the coronoid process, and that consequently there does not exist at that moment any room for an ulterior evolution. This position is maintained during several years and the adult state is fixed between the 16th and the 18th year according to the subjects and the appearance of the new tooth may encounter serious obstacles.

To this observation so easily verified in our race it is necessary to add this fact that in the inferior races the considerable development of the antero-posterior diameter of the jaws which leads to prognathism leaves at the posterior portion of the dental arch a considerable space which not only permits an easy evolution of the wisdom tooth but becomes even the cause of these anomalies by the numerical increase of the molars which transform everywhere the formula 32 into the formula 34 or 36. We have elsewhere insisted on these facts when treating of the "anomalies of the number of the dental apparatus," and when pointing out the great frequency of this variety with the Negro, Australian and New Caledonian.

These observations struck Darwin forcibly when he started the idea that the third molar was with man an organ in its decadence, and on the eve of disappearing, a mode of viewing it which brought Mantegazza and Broca completed to his cause.

At the time of this discussion by the Anthropological Society, in Paris, we were not disposed to lend ourselves to this opinion, for we had remarked that this atrophy of the wisdom teeth is found frequently also in the skulls of certain individuals in pre-historic times, in the Dolmen family for example, which we consider an inferior race, but the facts collected by M. Mantegazza and the weighty opinion of Broca were such as to convince us.

Another observation has given an additional value to the conjecture of Darwin: it is that whether or not the existence of the wisdom tooth may be more frequent in the inferior races, we recognise besides amongst these that the size of the series of the first and third molars are equal or increasing, while the order is met with reserved in the elevated races where the molars have a decreasing size.

Be it as it may, these divers considerations have been brought forward here, only because they seem to furnish us with some clue to the great frequency of the complications of the wisdom teeth in our race.

(To be continued.)

A GOOD OPENING FOR A YOUNG MAN.—The *Allgemeine Weiner Medicinische Zeitung*, contains the following advertisement in prominent type, with notice that applicants may obtain further information from the editor:—"A young unmarried doctor of medicine, of the Jewish persuasion, has the opportunity, by marriage and the succession to a lucrative dental practice, of insuring a very agreeable existence. The practice can be proved to be worth ten thousand florins per annum. The young lady in question is the daughter of highly respectable parents, seventeen years of age, handsome, well brought up, and equally well educated. Her father is desirous of retiring from the business, and will make over to a young doctor of medicine, without compensation, his dental practice and his excellent dwelling house, with all the material, dental instruments and apparatus, of the value of from eight to ten thousand florins. A knowledge of the dental art is not at first requisite, as under the tutelage of the present possessor this can be acquired in a few months."

PRESENTATION OF PORTRAIT OF MR. JOHN TOMES, F.R.S. An interesting ceremony took place at a recent meeting of the Odontological Society of Great Britain. Mr. Parkinson, speaking at the meeting said:—

In the early days of this Society, up to the year 1861, we were presented with the portraits of the retiring Presidents. But in 1862 Mr. John Tomes, the President of that year, with characteristic unostentation, substituted for his portrait a handsome prize on a subject of great importance, a Treatise on Dental Caries. In one sense I regretted this, since no member of our body could more worthily or deservedly occupy a space our our walls. He then remarked that the time had arrived when the gap should be filled, and accordingly an excellent portrait by Mr. Macartney had been secured.

Reflections from the Surgery.

A NOVEL FILLING.

Case under care of A. H. Tester, D.M.D., L.D.S., Eng.

The following incident in practice may be of interest to our readers:

N. B., æt. 27, called on me some time since in order to have his mouth examined. On examining his teeth, I found them remarkably good, with the exception of a few crown cavities. In the first lower molar on the right side, I found what appeared to be a very good crown amalgam filling. I examined it carefully, and to all appearances it was very compact, the edges being neatly trimmed and smooth. The patient expressed regret at not having paid proper care and attention to his teeth, and said that he had not been to a dentist before. I replied that I thought he must have made a mistake, as I could show him one very good filling in his mouth which I considered very well done, and likely to preserve his tooth for some time.

He again assured me I was the first dentist he had ever consulted, and as regards the filling I had found it had occurred in the following manner:—Last season on returning from duck shooting, he remembered while dining on the proceeds of his day's sport, to have bitten on a shot; which was forcibly driven into a cavity existing in this tooth, which had been slightly sensitive prior to this.

Finding he could not remove it with a toothpick; he had taken to grinding on it, and as it caused him no pain or trouble, had eaten on it ever since. I told him I did not wish to remove it, as it had done such good service, but asked him to take special notice, and let me know from time to time how it was progressing.

British Journal of Dental Science.

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THE EDINBURGH MEETING.

The annual general meeting of the British Dental Association lately held at Edinburgh was from a numerical point of view successful. The fear which seemed to exist in the minds of its promoters, that a falling off of numbers would occur, was, we believe, unfounded. We, accredited as we are with an "ingenuous interest" in the movements of the association, cannot pass by without some notice of the remarks of an Association, purporting to be the mouth-piece of the best grades of the dental profession. The Presidential addresses taken with the ratified reports of the secretaries may, we presume, be accepted as *ex cathedra* utterances and as such constitute a more or less accurate exponent of the views and policy of the Association. The Association programme is, of course, the promotion of good deeds and the punishment of evil doers. Such a comprehensive undertaking commends itself to all. In the past year little penal work seems to have been carried out. Two cases are upon the agenda, while one is pending. Complaints have been heard that the association is far too little truculent; we cannot think so. To make itself the public prosecutor is a most invidious office for any save a criminal investigation confraternity, and the alternative policy of preaching good works that evil doers may amend the error of their ways, certainly appeals more favourably to the minds of the majority. Many right-minded men do "a little evil" *for auld lang syne*. 'Tis as their fathers did and so do they. Such men are dangerous enemies, because they are not self-convicted criminals, and such men would be apt to ask "who make ye rulers in Israel? And who did? The Association, if it is to survive and is to represent the whole profession, must open its ears to such questions. None will come before us in expressing respect for, and reliance in, the Association, but at present we cannot regard it as in any sense representative.

The reason for such a state of affairs is not far to seek. There are counsellors who narrow the views which should be broad, who hamper the policy which should be wide, who concentrate within the strait environs of a few men's minds, and those not always large, the plans and schemes which should be the common property of the Association and indeed of the whole profession. The Association, unless it is to degenerate into a mutual admiration society for the London members and those few provincial dentists whose names figure in the lists of the various branch meetings, must try to gain the esteem and confidence of the profession. To lead by the nose is not always feasible, it is but little trouble and so is popular among the brave spirits, but a time comes when the most patient creature will not follow and then comes the tug of war. The feeling is abroad, haply, is it erroneous, that the present policy of Association, such as it is, expounds the views of a coterie, very able and very honest it may be, but still it smacks of 'self.' The profession makes advances day by day and becomes less tractable. It possesses a policy of its own—it desires "to get on." The Association also lays claim to a policy not quite dissimilar. Its policy takes the well-being of the Association first, which means, of course, as many members or as few as you like, and afterwards comes the profession. If the dentists don't do as the Association likes, so much the worse for the dentists! It becomes obligatory upon the profession to subscribe one guinea and hold their tongues ever more.

Take the instance at Birmingham. The Midlands have long sought for an opportunity for ventilating their views and holding meetings for the advancement of knowledge and for practice. The Association did not fulfil this end and hence the *raison d'être* of the Midland Odontological Society. This society, however, does not jump with the whim of the wire pullers of the Association, and so, it is to be done to death for its temerity, and a branch of the Association is to be foisted upon the Midlands. We are not concerned with this individual issue, the point before us is, why, if the Association has really at heart the well-being of the profession, does it try—of course futilely—to scare out of the field all other bodies started with similar objects to its own.

If it could be shown that the haughty tone of the Association, its repressive policy, its selfishness and self-aggrandisement, were in any way the line of thought and course of action of the profession at large, we should see an excuse for the sweeping character of its objurgations even though we could not condone its conduct. All confess great abuses have existed and still exist among persons styled dentists and all allow to the Association great credit for its aid in lessening evils and promoting the dignity of the L.D.S. These measures were however the work of men who unfortunately for the profession have grown too busy or too shattered in health to wield the Councils their presence adorned. Let us hope that a past period of prosperity may not tempt those into whose hands the pilotage of the Association has fallen to forget storms may arise and that then wise heads will stand in better stead than gibing tongues and the fanatic's taunt.

If we speak strongly we feel strongly. It is with no spirit of cavilling that we animadvert upon the doings of the Association, but simply because we are convinced that the time has come when the Association should recognise that it is in its present posture running counter alike to its own interests and those of the profession. It will be our endeavour subsequently to offer suggestions and indicate a line of procedure which may stimulate the British Dental Association to adopt measures more in accord with its tradition and its interests.

BRITISH DENTAL BENEVOLENT FUND.

Those who read the official statement of this Fund as set forth at the late meeting at Edinburgh, must be struck by the miserable response the appeal of the Committee has met with. There must be something radically wrong somewhere. Who is at fault? Those who sit in high places and administrate the Councils and the resources of the Fund? Is it we, the rank and file of the Profession, who are so purblind to our own interests, so utterly and inhumanly selfish that we refuse to help ourselves and our neighbours? As we showed last issue, the largesse has been given to non-associates. So we cannot saddle the Association with prejudice, nor, we think, can any complain of a sectarian character in the promotion of the Fund. Where it is narrow is in the lists of its subscribers, subscribers who in our opinion really should never have been called upon to put their hands into their pockets. It is saying little for the Profession at large that an appeal so widely proclaimed should fail so entirely to gain support. If their exists a feeling that the Benevolent Fund is a mere bantling of the British Dental Association, it should be disabused from all minds, we are confident that the executive would willingly associate with them non-association dentists. At the same time, it is too absurd to expect them to continue a fund for persons who simply are too lethargic in the days of their prosperity to lay by for the misfortunes and mishaps of the time to come. Unless the Profession bestirs itself as a whole the Benevolent Fund must drop or fall into a purely sectarian character. Surely there is enough *esprit de corps* to help the helpless among us—the wives and children—or enough pluck to say why so miserably selfish a policy sullies a whole profession.

Dr. Petermann and Bogus Degrees.— Dr. Adolf Petermann has laid all right minded practitioners under an obligation by attacking with such nervous energy the salesmen of quack diplomas. He has addressed a lengthy communication to the Deans of the Dental Colleges of America. Dr. Petermann, after referring to the article by Dr. Tierney in the "Independent Practitioner" says:—

"Personal knowledge of many such instances compels me to add mine as corroborating testimony to the truth of these statements of your own countryman. The case in question is of quite recent date. A person, originally a barber's assistant, and a short time before his departure employed in a dental laboratory to do the most ordinary mechanical work, left this city for America. After his matriculation in a certain college, he attended lectures for the space of four months; from November until February, and at the end of that time was graduated a D.D.S. This man neither speaks nor understands English, and is barely able to read a few words in that language. Under these circumstances, how was it possible for him to comprehend the didactic lectures on scientific subjects which he listened to in the American class-rooms?

There are quite a number of persons, with just such qualifications as those above mentioned, practicing in this country as American Doctors of Dental Surgery, graduated by legal and reputable colleges. These men would not even have been permitted to matriculate in a German university; much less would they have been admitted as candidates for the State examination. How can it be possible for illiterate persons, who cannot express themselves correctly in their own mother-tongue, to be benefited in any appreciable way by listening to a lecture the subject-matter of which is far beyond their mental grasp, and pass a successful examination in an American college, with no previous knowledge of the language before their arrival in America? How can it be possible for these foreigners, with their linguistic disadvantages and lack of general education, to acquire in from four to five months sufficient knowledge for graduation, when you exact from your native students a two or three years' course? I must agree with Dr. Tierney, when he says, in the article before quoted, that "these five-months doctors must be regarded, if not in the manner of their graduation, at least in fact, and in the amount of their acquired knowledge, as those are who hold their diplomas from John Buchanan or the Wisconsin Dental College."

It cannot surprise you, that German Dentists who, although not possessed of titles, have passed through the trying ordeal of a rigorous examination, and have obtained the approval of the State, refuse to acknowledge as colleagues this class of American Doctors of Dental Surgery.

The German public can have but one opinion in regard to the integrity of American dental colleges, when it sees, again and again, men returning from America, after a five-months' absence, as Doctors of Dental Surgery who, previous to that time had been known to them as ordinary workmen, holding in some instances very menial positions.

We have in Germany a considerable number of superior American dentists, who of course are the chief sufferers. In consequence of these unfortunate circumstances, their professional standing is belittled and the value of their D.D.S. very much impaired.

The whole world, and Germany not least, has appreciated and acknowledged its obligation to the dental profession of America, for the progress it has made and for its successful efforts to promote dental education, and through that to raise what was once a mere craft to an honourable place among the professions. Your dental colleges were for a long time considered the high schools for dentists. And those dentists held a high place in the esteem of the public and among their fellow-practitioners, who, in addition to an university education in their own country, had enjoyed the advantages afforded by an American college. In consequence, many educated dentists have heretofore availed themselves of the opportunities offered by American dental colleges for perfecting their professional education. But at present things are very much changed in this respect. Of late years many persons who have gone to America to obtain diplomas have been either possessed of no education, or were deficient in its most essential parts, who went abroad less for the purpose of storing their minds with the knowledge necessary for professional success than to obtain the D.D.S. in the shortest possible time.

This pernicious practice, which has already greatly injured the reputation of your colleges, if continued, will entirely destroy the confidence of German students in the worth of American dental diplomas. The educated dentist, who might desire to go to America for the purpose of enriching his knowledge and experience at one of your colleges, is deterred by the thought that he must be brought into contact with and replaced upon a par with persons whom he cannot recognize as equals and colleagues.

I believe I have given you a brief and correct statement of the situation. I cannot doubt that your interest in dental colleges is as warm and sincere as my own. Pardon me, therefore, for urging you to give this matter your earnest attention, and to devise some means whereby this deplorable state of affairs shall cease to exist; so that hereafter only thoroughly qualified students shall be graduated, and that all candidates for graduation who have not gained the approbation of their own State and country, or those who have not obtained at least a preparatory education in one of our universities, shall not be graduated until they have been regular attendants upon the full courses of lectures for several years, and have given positive evidence of fitness to receive a diploma by their ability to pass a severe examination. It is only by such a course, strictly adhered to, that you can regain for your colleges that prestige which they formerly enjoyed in foreign countries.

Manipulative Miscellany.

All inventions or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

LEMAN'S SUCTION VALVE.

Mr. Josiah Ritchie has introduced to our notice Mr. Leman's new suction valve which certainly possesses the merit of simplicity as well as perfect efficiency. Its simplicity consists of its being made in one piece only, so that there is nothing to lose or requiring accuracy of fit. It is in the form of a little circular gold box with a corrugated bottom, having a small aperture in the centre, and over the box—the top indeed, if it it may be so called—are two gold straps in the form of a cross. The little gold box is to be vulcanized into the top of a suction chamber in the ordinary way. Tin discs and means of fastening in position being supplied for the purpose. Instead of the usual indiarubber valves Mr. Leman prefers little discs of leather which the claims make far more perfec fitting valves when moistened.

These little leather discs have only to be tucked with any pointed implement under the gold cross, when they are in position for use, their renewal being of course equally simple. The specimens we have seen have been mounted in IX. Pink and Eagle rubbers, and really look very elegant and not as though they would in the least inconvenience the tongue.

TIN EXCAVATOR PATTERNS.

Mr. Daniel R. Collins, of Newman Street, has prepared dummy excavators of pure tin, in order that any gentleman who may have a fancy for any particular bend of instrument, has only to form one of these soft metal patterns to the shape he requires and return it when it will be faithfully represented. We should think this simple idea will be of considerable benifit and convenience especially to provincial practitioners.

GUIDE RUBBER DAM PUNCH.

Mr. Rutterford has a singular guide instrument made by Messrs. S. S. White, by which the punching of the rubber dam is greatly simplified. It is a small iron frame having a semicircle of holes, with sharp edges and of varying sizes, in the ordinary position of the teeth. The rubber dam is placed on this and a top plate, which is hinged to the lower placed over it. This top plate has a corresponding semicircle of holes large enough to carry a cutting punch which is pointed. The rubber-dam once in sitn, it is only necessary to insert the cutting punch into the holes corresponding to the teeth to be operated on and their proportions and sizes are sure to be correct.

Abstracts of British & Foreign Journals.

DENTAL COSMOS.

AMERICAN DENTAL ASSOCIATION.

REPORT BY DR. A. W. HARLAN, CHICAGO, UPON PYORRHEA ALVEOLARS.

THE profession are liable to confound with pyorrhea alveolaris salivary deposits on the lower incisors, or such deposits on the buccal, palatal, or lingual, surfaces of molars. Salivary concretions, however, are only in slight degree the cause of or associated with pyorrhea. In many incipient cases a careful examination shows that there is a slight recession of the gums about the necks of affected teeth ; in others none. In long-standing cases a blunting of the septum of gum lying between the teeth may appear, with a tendency to bleed. In all cases where the discharge of pus is abundant on pressure, there is loss of more or less of the bony process surrounding the root of the tooth, its symmetrical outline disappearing irregularly. Hence the varying depth of the pockets. Where the process is thinnest normally there is the most extensive destruction of bone.

Pyorrhea alveolaris is not a disease of old age, especially. More cases are to be found between the ages of twenty-five and forty-five, but it may occur at any age. Users of tobacco are not less liable to suffer than those who do not habitually use it. The worst cases often occur in those where tobacco had never been used. Long-crowned teeth, slender teeth, teeth with small necks, and teeth which have been separated by files and discs, and not properly cared for afterwards, teeth pretty generally free from extensive caries, teeth of mouth-breathers, are the ones most liable to be affected by pyorrhea. Teeth which have lost their antagonists early are not often affected. After the inception of the disease, teeth which are normally even and regular in their appearance change position, become twisted in their sockets, spread laterally, protrude over the lower lip (the central and lateral incisors) and if a tooth should be extracted through thoughtlessness or ignorance, the contour of the mouth may be changed. The teeth may even overlap each other, or a tooth may be pushed out of line.

The vast majority of cases of pyorrhea are seen uncomplicated with salivary deposits. In some cases, salivary deposits occur on the inferior incisors and on the buccal surfaces of superior molars, while the remaining teeth are free from incrustations still the patient suffered from true pyorrhea. Several cases have shown a tendency to the deposition of salivary calculus on certain teeth while undergoing treatment. The dentist not in search of these cases will frequently be deceived by the appearance of the gums, as not many cases present an inflamed or thickened margin; few cases are to be seen where the *ligamentum dentium* has completely lost its hold on the neck of the tooth, and fewer still where the gums present a pale, flabby appearance. Many cases are seen where the gum has a purplish colour, of various shades, corresponding to the outline of the pocket beneath. Pockets may be seen on the labial surfaces of the anterior teeth before the destruction of the alveoli has begun.

TREATMENT.

Instruments. Experience has shown the necessity for possessing three probes of extreme delicacy for examining the pockets: 1st, for their depth and width; 2nd, for detecting serumal deposits on the roots, and 3rd, to discover the condition of the edges of the alveoli. The probes should be smooth-pointed, the mouth should be thoroughly cleansed with tepid water, and the gums dried with bits of paper, or fibre lint. When the condition of the gums, roots, and alveoli has been ascertained the plan of procedure must be determined. When there are salivary deposits they are to be removed at the first sitting, and the patient furnished with:

℞.—Pinus canadensis (white), ℥ ss.
Aquæ rosæ, ℥ iijss.
Eugenol, ♏xxx.
M.

Sig. Use thrice daily for six days on a badger tooth-brush.

If there are more than four teeth affected it is best not to remove the deposits from all at the first sitting, but reserve them for the second appointment, on the fourth succeeding day. Then include the four following, and so continue until the whole number have been thoroughly treated.

The instruments necessary for the removal of deposits which please Dr. Harlan best are known as Cushing's scalers. In addition to the above, two or three small spoon excavators are necessary for scraping and excising the edges of the alveoli, when it is not possible to accurately bur the edges with an instrument run by the dental engine. Where the teeth are widely separated, instruments of grosser caliber may be used. An ordinary hypodermic syringe with any approved point is also necessary. There should be points of at least three differing angles, in addition to one straight one; these points should not be too sharp. Two syringes are all that any one needs. The pockets are injected with H_2O_2 from a special syringe, immediately following the removal of the deposits and the excision of the edges of the process. Iodide of zinc may be used in solution of water—from three to forty-eight grains to the ounce,—beginning with the stronger solntions in the worst cases by injecting two to four drops in each pocket, and gradually decreasing the strength until the cessation of treatment. The above solutions are injected immediately following the injection of $H\ O_2$.

The patient should refrain from brushing the gums with a stiff brush and from fingering or squeezing them during treatment. The Pinus canadensis prescription may be stopped when the treatment of the pockets begins. Loose teeth are wired together with the binding wire (tinned); or silver, platinum, or gold wire may be used. The patient in the beginning is required to appear once in four days. When constitutional treatment is called for, which is seldom necessary, the patient is placed under such appropriate treatment as case demands. The injection of H_2O_2 is discontinued when suppuration has ceased ; a useful dentifrice in the form of a paste is as follows :

℞.—Precip. chalk,
Powd. Orris root, aa, ℥ ii.
White Castile soap,
Powd. Borax, aa, ℥ ss.
„ Myrrh, ʒ ii.
Honey and glycerine, q. s. to make a soft paste.
Colour rose pink.
Perfume to suit.

To be used before retiring and after breakfast on a brush not dipped in water and not too stiff.

Twenty drops of eugenol may be added. Generally this oil will be found a desirable addition. After the fourth or fifth visit the interval between appointments may be lengthened to a week, then to ten days, and finally to two weeks.

Dr. Harhan found that in all acute cases of pyorrhea associated with pain, iodoform made into a paste by adding oil of cinnamon or eugenol until of the consistence of thick cream is an excellent anæsthetic. It is used by packing the paste into the pockets, directing the patient to return in three or four days. Good results follow in painful cases from the injection of weak solution of chloride of aluminium, one to three grains to the ounce of water. As soon as the inflammation has subsided these are to be discontinued.

Useful remedies probably are in this stage of pyorrhead iodo-chloride of zinc, chinoline tartrate, saturated solution of iodine in wood creasote, iodoform and eucalyptus, dilute alcoholic solution of menthol, etc.. After treatment of these cases consists in keeping the mouth scrupulously clean.

The practitioner who desires to succeed in curing pyorrhea must be an heroic surgeon, and a careful therapeutist.

INDEPENDENT PRACTITIONER.

The Possibilities of Hereditary Transmissions of Oral Lesions.

By W. C. Starbuck, D.D.S.

Dr. Starbuck, with many others, habitually removes the first permanent molar in the treatment of irregularities. Does this ablation form the stepping stone to future dental deficiencies? William Gunning believes that dentists, by so operating upon the unformed jaws of childhood tend to determine narrowness of jaws. A comparison of jaws from the dead of years ago and from the living shows that in the former the arch was wider, its span deeper.

The narrowing of the jaw becomes more marked every generation. The effect is hereditary. Other authorities coincide in saying such oral deformities are hereditary. Ribot even asserts that *accidental* mutilations may become transmitted by heredity. He instances the Peruvian skulls, and the tailless dogs of the Esquimaux, due as he believes to their practice of cutting off the parents tails. A mother who scarred her face, we are assured produced children all of whom were scarred like their mother. These instances the author believes, go far to prove that the oral peculiarities of families whether congenital or due to the interference of the dentist, may be handed down by heredity from generation to generation.

EXPOSED PULPS.

By J. D. Patterson, D.D.S., Kansas.

The systems of treatment have been radically different and have seldom proved satisfactory. The success attending pulp capping does not at present admit of statistical proof. It depends upon the condition the pulp itself is in as well as the state of health and temperament of the patient. All fast and hard rules are fallacious, as each case must be treated upon its merits. If the pulp has become much irritated, and inflammation and suppuration are present, capping will be followed by destruction of the pulp. Ossification and exostosis do appear even in spite of capping. It is impossible to get a permanent useful result from treating a portion of the pulp, such as one fang when the others are diseased. "The protection of pulps that have lost part of their substance, will, I believe, ever be but an experiment, with the odds against such success as ought to justify the practice." Extirpation is the proper treatment in such cases.

Pulps which become exposed when disease is absent admit of treatment. Here it is difficult to estimate the condition of the pulp. Dry the cavity and use a non-irritant filling. This, after a time is removed for careful examination. Next disinfect, with carbolic water, eucalyptus oil, salicylic acid, listerme or alcohol et cœt. The application should be of a temperature grateful to the pulp. Then silk adhesive plaster or sandarach varnish should be used to coat the pulp. This coat may be duplicated and then a cement filling added. If the pulp be upon the verge of suppuration, a cap of oxide of zinc and creosote should be used. Gold, if used at all, such only be employed at another sitiing. If after trouble occur, remove the filling, and if needful, extirpate.

When decay has reached the pulp and no exposure has occurred, these cases, if care be taken to disinfect and leave the protecting organic layer, do well.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Ordinary Monthly Meeting, June 9th, 1884.

(*Continued from page 822*).

Dr. St. George Elliott said he should be glad if any member of the Society could give him some useful hints with regard to the treatment of dental hyperæsthesia. The case he had in mind was that of a lady who came to him complaining of the most exquisite sensitiveness in the right upper lateral. Every part of the tooth was sensitive to the slightest contact, so that the patient could not drink or take food without suffering acutely. All the usual remedies were tried, but without any improvement resulting. Then the canine began to be affected in the same way, and as treatment appeared hopeless, and there were cavities in both teeth, Dr. Elliott very reluctantly destroyed the pulps.

He next exhibited a set of nerve broaches, the points of which had been made in his own workroom of piano wire. Pieces of wire about 1½ inch in length were mounted in the engine, and made to revolve between a larger moving corundum wheel and a piece of the same. Donaldson's bristles were expensive and too pliable, owing to their length, whilst these were easily made and answered the purpose admirably. The handles were made of celluloid, of different colours, and aluminium bronze. This had the appearance of silver, but was bright and did not tarnish; it was rather a difficult alloy to work, but was very useful for such purposes as this.

Dr. Elliott also showed in a tabular form the result of a series of observations which he had made with the view of ascertaining which was the best form of battery for use with the electric mallet. It was important for this purpose to have a battery of high electro-motor force one which did not rapidly deteriorate, and did not require much attention. Those which he had selected for comparative observations were the Leclanché, the Lund, and a modification of these in which the area of the carbon was increased fourfold by having two pieces instead of one, and drilling holes through these; the two carbons were also platinised. The element was constructed of two perforated carbons and three Leclanché agglomerate blocks; the zinc was placed in a tray of vulcanite suspended just beneath the carbons, and was immersed in mercury. The experiments were carried out chiefly for the purpose of ascertaining whether these changes were of any real value.

LECLANCHE.	
E.M.F. 1·1 Volts.	
Short Circuit.	
hours	E.M.F. in Volt.
1	·6
2	·5
Open Circuit.	
hours.	E.M.F. in Volts.
1	·8
2	·9
3	·9
5	1·
4	1·
6	1·
AMPERES.	
At starting	·4
5 mins.	·25
15 „	·22
In 2 hours short circuit lost ..	·6 E.M.F.
In 2 „ open circuit recovered	·4 „
Internal resistance	3·50 ohms.

LUND.			
E.M.F. 1·5 Volts.			
Short Circuit.			
hours.	1 carbon. E.M.F.	2 carbons. E.M.F.	
1	·8	1·16	
2	·7	·9	
3	·6	·8	
4	·6	·8	
5	·6	·8	
Open Circuit.			
hours.	1 carbon. E.M.F.	hours.	2 carbons. E.M.F.
1	1·	½	1·2
2	1·16	2½	1·5
3	1·16		
15	1·4		
AMPERES.			
At starting	1·16		
5 mins.	·9		
15 „	·7		
	1 carbon.	2 carbons.	
In 5 hours short circuit lost ..	·9	.7	
In 3 „ open circuit recovered ..	·56	—	
In 2½ „ „ „ ..		·7	
Internal resistance	1· ohm.		

ELLIOTT.	
E.M.F. 1·6 Volts.	
Short Circuit.	
hours.	F.M.F.
1	1·16
2	1·
3	·9
4	·9
5	·9
Open Circuit.	
hours.	E.M.F.
1	1·2
2	1·4
3	1·4
15	1·5
AMPERES.	
At starting	1·8
5 mins.	1·2
15 „	1·16
In 5 hours short circuit lost ..	·7 E.M.F.
In 3 „ open circuit regained	·5 „
Internal resistance	1· ohm.

The preceding table gives the results obtained. First the electro-motor force (E.M.F.) of each cell is given. The Leclanché being rather old, though clean and freshly charged, the E.M.F. is not quite as high as it might have been. The cells were next placed on short circuit, and their condition tested at the end of one and two hours in the case of the Leclanché, and up to five hours with the others. The Leclanché having in two hours lost more than half its E.M.F., was then put on open circuit and tests taken every hour for four hours, with the results as shown. At another time the tests were made for ampère.

In the case of the Lund, the tests were first applied to it in its original form. Then Dr. Elliott's double carbons were put in instead of its own, and the result noted. The third column gives the result of the tests as appled to this double carbon form.

It may be stated for the purpose of comparison that the Bunsen battery supplied by the S.S. White Manufacturing Company is stated by the makers to have in the four cells 5·46 volts E.M.F., 3·8 ohms resistance, and 1·43 ampère.

Mr. Storer Bennett said that for two years past he had had in use in his house a four-celled battery supplied by the Gutta-Percha and Telegraph Company, and during the whole of that time it had not required any readjustment or attention of any sort. It was originally constructed by the Company for blasting purposes; he had a similar battery to work the electric bells with which the house was fitted, and this also had given him no trouble whatever.

In answer to a question from Mr. Browne-Mason, Mr. Bennett added that the battery was contained in a closed box, and that he could not state what its interior arrangements were, as he had never had occasion to examine them. Evidently, however, the carbons were always immersed, the battery being ready for action at all times without any manipulation being required.

Mr. Browne-Mason (Exeter) said he should be glad to know something more about Mr. Bennett's battery, since his experience had been very different. He had obtained a battery from the Dental Manufacturing Company, and at the end of a fortnight it appeared to be completely worn out. He thought there must be a considerable amount of waste if the carbons were kept immersed in the solution when the battery was not in use.

Mr. W. H. Coffin said the Leclanché battery possessed several advantages as regards durability and economy of working, but as ordinarily met with, it was not constant enough for many purposes. The strength of the current might, however, be very greatly increased by sufficiently enlarging the surface of the carbons, and the batteries now used for blasting were on this principle.

By a recently discovered process, the patent for which had not been fully secured, agglomerated blocks of carbon and peroxide of manganese of very large size could now be made. These could be set up in very tall jars or lengths of glazed earthenware pipes with rods or strips of zinc excited in the usual manner with solution of chloride of ammonium. Such a battery would work for several years and require very little attention.

Dr. Field said Dr. Bodecker, of New York, had a battery of twenty Leclanché cells, of which he used ten at a time, alternately; he used this for probably eight hours a day. It had been in use eighteen months, and was still working as well as ever.

Dr. Elliott replied that the objection to Leclanché battery was that the intensity of the current ran down very rapidly when placed on short circuit, but on a long circuit this was not the case; it was therefore a very good battery for telegraphic purposes. As to the question of waste if the elements were kept immersed in the solution, this did not take place to any appreciable extent if the zinc was thoroughly well amalgamated. He could add from personal experience that but little reliance could be placed on estimates of the average daily use of a battery unless these were based upon daily notes. For some months past he had kept an accurate account of the time his batteries had been in use, andwhereas he should have stated the average daily time at from two to three hours, he found that the actual average over a considerable period was scarcely one hour.

ERRATUM.

In our issue of September 15th, a very unfortunate error occurred in the making up of page 845. The first nine lines having been misplaced; they should follow the 23rd line.

BOOKS AND PAPERS RECEIVED.

Lancet; British Medical Journal; L'Odontologie; Pharmaceutical Journal; Dental Cosmos; Zahntechnische Reform; Independent Practitioner; Prague's Dentaire; L'Art Dentaire; Chemist and Druggist; Dental News; New England Journal of Dentistry; Monatsschrift des Vereins Deutscher Zahn Kunstler; Dental Luminary; Gazette des Hospitaux; Southern Dental Journal; Report of Manchester Dental Hospital; El Progreso Dental de la Habana L'Odontologia; Pharmaceutical Journal.

British Journal of Dental Science.

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PRELIMINARY EDUCATION.

By C. L. Goddard, A.M., D.D.S.*

(Professor of Mechanical Dentistry in the Dental Department of the University of California.)

Mr. President, Ladies and Gentlemen,—

It is usual on such occasions as this to say that we come before you with mingled feelings of pleasure and regret. I will say the same thing again to-night, for there is a feeling of pleasure that these young men, whom we send away from us to-night, will be no longer compelled to listen to our dry and tedious lectures; and a feeling of regret that we could not make all of our instruction more interesting and beneficial. Time, however, will work changes. We may learn to clothe all our teachings with flowery words, and accompany them with such apt illustrations, that they will readily enter even the most unwilling ears, and impress the most unwilling minds.

Perhaps, however, that would not be best. It might make the student too indolent. The amount of knowledge gained depends more on the student himself than upon the instructor, for the latter can at best only guide and make suggestions, while the students own application and perseverance will determine the amount that he will learn, and the skill that he will attain.

This brings us to the special subject of my address, that of "Preliminary Education."

It is a fact that may not be known to all of you, that very few of the many Medical and Dental Colleges of the United States require a student to pass an examination before entering upon his course of professional study.

We Americans are a free and fast-going people. Our self-admiration and self-confidence have reached such a point that we feel ready to undertake anything whatever, whether we are qualified for it or not. This has arisen from two causes: our boasted freedom to do as we please, and our Yankee ingenuity, which has so often helped us out of our difficulties.

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* An Address delivered at the joint commencement Exercises of the Medical and Dental Departments of the University of California, San Francisco, Cal., November 13, 1883.

An American will undertake to do offhand that which a European would not dare to attempt without long and steady training. It is the outgrowth of the spirit which led our forefathers to cross the ocean and found a new nation.

In many things, however, we have gone too fast and too far. In too many cases we have proved to be "Jacks at all trades and masters of none."

Our medical and dental schools have been too ready to accept as students, all who applied, no matter how proficient or deficient they might be. What has been the result? Many a student has realized, late in his course, that he has wasted his time in trying to learn that for which he was unfitted. It is as if one should try to spell without having learned his letters.

Our common schools set a better example than this, for what youth would expect to enter a school of advanced standing without first having mastered the studies of the lower grades?

Whoever enters a college or university for classical or literary study must first have thoroughly prepared himself by mastering preliminary studies.

Law, theology, and medicine are called the three learned professions.

The study of theology requires a preliminary education of a high standard. Its text books abound in quotations from the dead languages, and classical knowledge is necessary even for a beginner. That is why theology is a learned profession. That is why the majority of the teachers of divine truth are suited to be leaders of the many.

The same may be said to be true of the Law. Many of its fundamental theories, that is, the laws of law, are written in a language that is no longer spoken but yet is an universal language. The books are sealed to the many, yet are open to the scholar all over the world.

You may say then that Medicine and its allied study of Dental Surgery do not require such preliminary training because the science is of later growth, and that its text books are all in modern languages, so that there is not the necessity for so advanced a preliminary education as in the case of the other two professions.

It may be that there is not the necessity for the *same* preliminary studies, but I claim that there is a necessity for the same *amount* of preliminary study. The man who will read

Greek must first learn the Greek alphabet, and the man who will add and subtract must first learn figures and their meaning. Each of these preparatory studies is different and yet they are equal in amount and discipline—*Discipline*—that is the point which I have been striving to reach. The study of schools and colleges is for a two-fold purpose, it is for the value of the subjects mastered and yet most of all for *discipline.*

The mind is trained to seek new things, it is trained to study and think and learn. When one subject is mastered the mind grasps the next one more easily. The purpose of study is to teach us *how* to study, that is, how to learn easily and thoroughly whatever we may wish to know.

The graded curriculum of the schools forms a habit of study that is worth untold amounts all through life. The faculty of observation is cultivated so that the educated youth will see and understand hundreds of things that will be passed by by one who has not developed this faculty. If a new science is to be learned, a new theory to be investigated, or new phenomena to be accounted for, the man who has learned how to study and how to observe, will have a wonderful advantage over one who has neglected these opportunites.

There has just been inaugurated in the Dental Department of the University of California a preliminary examination for those intending to enter upon its course of study.

In taking thus a new departure from the established customs of most dental colleges, there will be difficulties to contend with. It is not with any desire to make this college more aristocratic than others, but the change is made for the good of the student himself.

One young man who objected to a preliminary examination said, to use his own language, that he did not see what business it was of the professors whether he understood grammar, mathematics, and physics, or not. That if he attended lectures two years, and could not pass the examination at the end it was his own look out. I asked him if it would not be much better if he could find out before entering the course whether he was fitted for it or not, and thus not only save himself time, expense and mortification, but enable him by preliminary study to prepare himself so that there would be no doubt that he could listen to lectures understandingly, and have his efforts crowned with success.

As it has been heretofore, a boy who could not enter a printing office to learn a trade, could without hindrance enter a medical or dental school to learn a profession.

(To be continued.)

THE HIGHER LIFE IN DENTAL ART.

By Alfred Prager, L.D.S., etc.

I wish to base a few observations upon a matter which for some time past has been occupying a prominent place in our journals both at home and abroad, viz.:—“ The Healthiness of the Dental Profession,” meaning thereby, of course, of those individuals who are daily engaged in its practice. Now it seems to me that somewhat too much of the darker aspect of things has been brought uppermost to view by those who have been discussing the question ; and especially am I struck with this when reading a paper on the subject by Mr. Oakley Coles in this Journal, and which that gentleman read at a recent meeting of the Odontological Society. Therein he informs us that there is “ an increased liability to disease amongst the practitioners of Dental Surgery,” which is in itself a startling and by no means a pleasant revelation to the naturally timid amongst us, and sufficient to rouse us all to the importance of a question so vital.

Mr. Oakley Coles, with admirable *sang froid* and very concisely, goes on to classify the seemingly innumerable risks and dangers attendant upon the “ successful practice ” of Dentistry ; the very recital of which is calculated to possess our poor souls with terror at the awful idea that we are day-by-day slowly yet surely condemning ourselves to an early grave—sacrificing our lives, though in a manner most martyr-like, still devoid of that amount of glory we naturally expect to be associated with martyrdom. I must say that I agree in the main with those excellent precepts that Mr. Oakley Coles has laid down for our physical welfare and my object in penning these lines is only to attempt to direct the thoughts of my professional brethren to a more cheerful view of things, and to endeavour to remind them that they have many opportunities afforded them in the course of their everyday work, which may be used to counteract those baneful influences (?) of “ successful practice,” and made to predominate over, and so lessen the danger we are threatened with.

Now, allowing that the Dental Surgeon in active practice has instituted and surrounded himself with all those hygienic reforms as recommended, there is yet another very important phase of his life worthy of our attention, namely the psychological ; which indeed demands consideration from the share that it must have in all our corporeal troubles. This is a question which I think is not sufficiently deliberated upon in the light of its direct influence amongst our profession, though it is one that must in all walks of life, be taken as much into account as any material reform of a merely sanitary nature.

It is not my intention to attempt to explain fully this difficult question, which I hope to be greatly enlightened upon by other and abler hands, but I maintain that the dental surgeon like many others devoted to a liberal pursuit, has many advantages and opportunities in the practice of his profession which may in a great measure subordinate and control his bodily exertions, and I feel convinced that much of the unhealthiness of the dental practitioners, so much talked about lately is due greatly to the undue and morbid cognizance they habitually take of the unpleasant details of their duties.

The amount of enthusiasm, interest, or earnestness, a dentist infuses into his work, will of itself, to my mind, render him liable to rise above the frets and worries inseparable from his duties, and if he can only once bring himself to keep in view the aim and loftiness of his profession (for lofty it has become) he will discover that there is, if I may apply the term, a Higher Life in Dental Art, which cannot but have a soothing effect upon him both mentally and bodily. I here feel the difficulty of making myself properly understood, but I know many will comprehend my meaning. Moreover, the dental surgeon has, provided he can use tact and judgment enough, opportunities which few other professions afford, of that social intercourse at intervals of his daily work, by which he can by little justifiable manœuvres, get an insight into and even sound the depths of human nature, affording himself thereby abundant food for reflection, speculation, and record. I think it is always well if those who either from choice or circumstance follow our profession, can at times have their whole attention withdrawn and engrossed by one or other of the Fine Arts, especially painting or music, and indeed from observation I have found that a great number of our calling do possess artistic tastes. Where this taste is real and so far developed as to demand some amount of attention, only those who possess it can comprehend how far it goes towards softening down the asperities and relieving the strain attendant upon our professional work. The foregoing, I am aware has been often advocated before, but that makes it none the less worthy of repetition now ; besides, on this point I can speak from personal experience.

I am also aware that I may be told that all my remarks are of too subjective a nature to serve any direct or useful purpose, but I feel assured that to place on record our individual or abstract ideas concerning our work, is a duty we owe to each other, more especially when by so doing, our thoughts may be directed to a broader and more cheerful outlook upon our daily life at a time too when much that is being said relating to it, is of a nature at once alarming and dispiriting.

I am quite willing to admit that a great deal of our attention should be given to the details of sanitation and everything that can conduce to our bodily health, but I am of opinion that in this, as in many other things we may become over-anxious and apprehensive ; a form of hypochondriasis of all things to be avoided—and where did I recently hear or read of the "sorrows of a sanitary life?"

To conclude, I wish it to be understood that these crude and disjointed observations are not in any way directed against Mr. Oakley Coles' able paper, and are only written in the endeavour, though in ever so small a degree, to attract the attention and thoughts of the profession to matters less gloomy concerning itself. I furthermore trust that they may also serve as a touch of brighter colour to the excellent, though somewhat too sombre-hued picture that Mr. Oakley Coles has painted for us.

THE PREVENTION OF DENTAL CARIES.

By Henry Sewill, M.R.C.S., L.D.S.

(*Continued from page 899*).

An intimate connexion between dental mal-development and any other diathesis besides the syphilitic cannot be fully demonstrated, yet there are some of these constitutional conditions with which badly made teeth seem more or less associated. My experience goes to show that imperfect dental tissues are found in the majority of cases of scrofula. I would say that ill-made teeth are not at all a constant accompaniment of any form of phthisis nor are they especially noticeable in a majority of cases in patients of undoubted tubercular tendency. There is one class of patients, however, the subject of phthisis of tubercular origin which almost invariably presents faulty dental tissues. This is the type most frequently found in females, in which there is often, with a fragile form, considerable facial beauty, in which the eyes are large and expressive, the complexion fair, with the blue veins visible beneath the skin. This is the not uncommon type, in which I have invariably found the teeth, although well-shaped and beautiful to look at, covered with the softest enamel. With rickets I have generally found inherently defective teeth. I can in no way associate faulty tooth development either with the rheumatic or gouty constitution. Indeed, with the latter both teeth and jaws are often of unusually massive and solid character.

What general measures can be suggested likely to aid in the prevention of dental deterioration? We with other reformers, can direct attention to the need of national sanitation in the broadest sense. Syphilis is an affair mainly of police, and will surely be extinguished in this nation when the people are sufficiently educated in science. Scrofula and rickets are mainly poor children's diseases, and are the direct product of filth, darkness and starvation. The observance of the well known general laws of health, we may be sure, will tend to produce good teeth in the race, if not in the individual, and among these laws we must insert one inculcating the use of articles of diet that shall give due exercise to the muscles of mastication, and prevent them, and the bones to which they are attached, from wasting.

It may next be asked, can we, by any treatment, influence beneficially the developing teeth of the fœtus in utero, through a mother the subject of either of the diatheses or cachexiæ which have been named? Little reliance can in most cases be placed upon treatment specifically directed to this end, and we must depend mainly upon measures for the amelioration of the mother's general health, and the eradication of any definite morbid constitutional taint. To show that defective teeth might occasionally result from deficient supply of the necessary pabulum through the mother, Dr. Thorowgood has brought forward several cogent facts. He has pointed out that a hen with a broken bone lays, during the time the fracture is uniting, soft eggs; the earthy salts which should go to harden the shell being needed for the repair of the fracture. In a pregnant woman the union of a fracture is slow; the inference being that the lime salts are all required for the formation of the bones of the fœtus. In presence of these facts a rule may be established that in every case of cachexia during pregnancy, and particularly where there is a tendency to atrophy and bony wasting, there should be administered mineral nutrition, both dietetic and therapeutic. It is difficult to believe that any treatment could influence some cases in which a strong hereditary influence proceeding from the father gives a bias to the process of dental development. A mother with good dental tissues will often bear children with defective teeth, having the closest resemblance in form and structure to those of the father, in whom this may be the sole physical defect. We are ignorant of the actual physiological or pathological causation of defective enamel; but, as uncertainty exists, we had better err on the right side—especially as the error would be harmless—and enforce the rule that in every case in which ill-made tooth tissues are likely to appear, an attempt by diet and therapeutics should be made to supply to the developing tissues the mineral constituents of which they may stand in need. Also the dates at which the classes of teeth are calcified must be borne in mind, and that after the formation of enamel any attempts to prevent caries by improving the quality of that tissue must be futile. The exterior of the crowns of all the temporary teeth—from caries of which children suffer so much—are fully formed at birth; these teeth can therefore be influenced only through the mother. By this time the first permanent molars and the permanent incisors and canines are so far advanced in development that it is open to doubt whether our further treatment can have any effect upon the enamel of these teeth. There is, however, no difficulty in administering lime to an infant from birth, as lime-water is an admirable aid to the digestion of milk in infancy.

We must recollect that although structural defect in the enamel is a prime factor in the causation of caries, there is another factor as potent—viz., vitiation of the secretions of the mouth. The diseases of our times, unlike those of earlier days, are largely those which give rise to the formation of such agents in the mouth, for many or most of them are either diseases of the digestive organs or maladies accompanied by disturbance of the functions of digestion. In this way we may account for the prevalence of caries among certain portions of the community, whose physique and general health in other respects are not to a corresponding degree inferior, and whose dental tissues are not of the worst structure. For example, the constant presence of dyspeptic troubles in some classes of factory operatives is enough to account for the rapid tooth decay from which they suffer. These people earn good wages, and are well housed and clothed; but their occupation is sedentary, their food is usually ill-cooked and too solid and coarse; they drink bad beer and coarse spirit, and the result is chronic dyspepsia. This disease is so common in some communities that it is regarded as one of those evils from which there is no escape. When speaking of the association of ill-made dental tissues with certain diatheses, I was not unmindful that some of these diatheses have also as a common accompaniment vitiation of the secretions of the mouth. Thus one type of scrofulous subject—that with coarse features, muddy complexion, and long thick upper lip, has usually a chronic condition of congested oral mucous membrane with secretion of viscid mucous and saliva. Rickets, again, is often preceded and attended by a virulent form of acid dyspepsia.

The broad facts now before us are—first, that without acid, without vitiation of the secretions of the mouth, caries is impossible; and secondly, that acid capable of dissolving enamel—and of more rapidly dissolving enamel in proportion as the tissue is soft and ill-made—is always being formed in greater or less quantity in every mouth in which absolute cleanliness does not exist. In the term absolute cleanliness I include the absence of vitiated secretions such as accompany, in greater or less degree, every derangement of local or general health. Although the third predisposing cause to which I shall come presently takes an important part in determining the localisation of caries in some cases, this second cause should, with the first, which has been already discussed account fully for the association of caries as an accompaniment or sequel to constitutional disease. As factors these causes vary infinitely in quantity in different individuals. It is not possible to find two individuals with teeth exactly alike in structure, and with organic defects occupying exactly similar situations. Add to this that vitiation of the oral secretions as a factor in the causation of caries is of constantly changing potency in the daily life of each individual, and we fully account for the variability in different cases of the time of onset, the point of attack, and the rate of progress of the disease, as well as for its frequent intermissions.

In combating this second cause of caries, the patient's general health must first be considered, recollecting that probably every lapse from a perfect standard will be accompanied by a proportionate vitiation of the secretions of the mouth. The question of general health is for the physician, not the dentist. But even with perfect health and perfect dental tissues caries may appear if organic débris be allowed to remain and decompose in contact with the teeth. The first thing, therefore, in every case is to ensure mechanical cleanliness by the use of tooth-brush and tooth-pick, which latter should be of quill or wood only. I direct that it be used at night to clear away the remains of food from between the teeth, before they receive their final brushing. Where the teeth are crowded and are of delicate structure, the use of floss silk passed between the teeth and rubbed to and fro supersedes the toothpick. Until lately I have been prescribing as a routine for healthy mouths a tooth powder containing two drachms of Castile soap, half an ounce of powdered orris, two drachms of borax, and two ounces of precipitated chalk. To this has been added a few drops of oil of cloves and of oil of lavender or attar of roses. It is, however, very rare indeed to meet an individual in whom perfect health is constant and in whom one or other of the predisposing causes of caries does not exist. I have, therefore, latterly begun to urge my patients to use habitually a tooth powder composed of the solid ingredients named but containing instead of perfume, carbolic acid. I begin with a mixture, containing 1 in 40 of carbolic acid—that is, twelve drops to the ounce of powder—and I sometimes prescribe as much as 1 in 20. This, however, is too strong to be borne where the gums are tender. To disguise the flavour of the carbolic acid, I add eucalyptus oil, from ten to twenty drops to the ounce. I direct the mixture to be used freely—to be taken up on a wet toothbrush, and the mouth to be freely rinsed with water at intervals during the brushing. In fevers and other diseases in which the patient is either too feeble or too listless to clean his teeth for himself this should be done by an attendant. In all cases where great vitiation of the secretions is present, as in the dyscrasia of pregnancy, extra means should be adopted to prevent putrefaction and fermentation in the deposits which form upon the teeth. Pasteur has shown that perchloride of mercury is by far the most potent drug we possess for this purpose; and a solution of a strength of 1 in 5000 is antiseptically equivalent to a 2 per cent. carbolic acid solution, which latter, although not more powerful than needed to prevent fermentation, is too strong to be used as a mouth wash. I find a pleasant mixture of perchloride can be made if one grain be dissolved in an ounce of eau de Cologne or tincture of lemons. A grain of chloride of ammonium must be added to each ounce to prevent the perchloride from decomposing. Of this mixture a teaspoonful is to be mixed with two-thirds of a wine-glassful of water, and the mouth to be thoroughly rinsed with it several times a day. Before leaving this subject, I must point out that without due exercise in mastication teeth cannot be easily kept clean; and where the function is impeded by the presence of tender teeth these must be brought into a healthy state or extracted.

The third main predisposing cause of caries is crowding and irregularity of the teeth. This favours retention of particles of food and of other organic débris for long periods in contact with the teeth; it also greatly prevents the constant beneficial rubbing and polishing of which, in a well-formed jaw, every tooth during mastication gets a full share as well as impeding access of the alkaline saliva to those very surfaces where acid-forming substances find their location. This cause of caries mostly arises from smallness and malformation of the maxillæ, a condition which is, no doubt, largely associated with the physical type presented by highly civilised man. Of the causes of deterioration of the apparatus of mastication, I have not mentioned one which, in my opinion, is not without importance—namely, sexual selection. The type of female beauty for many ages has included a small, delicate jaw. I am afraid we cannot hope that, for the sake of the teeth of posterity, men will be advised to pick out big-jawed wives, but we can at least seriously impress hygienists with the fact that the human jaw, for its due development, needs adequate use, and that no dietary, however otherwise suitable its constituents, can be perfect which is composed of uniformally bland and soft substances calling for little or no mastication. In the meanwhile we have to deal with the crowded jaws which daily present themselves. The most universally beneficial measure to prevent caries in these cases, especially where the teeth are of imperfect formation, is the extraction of the six-year-old molars as soon as the second molars are well in place. The first permanent molars are, with rare exceptions, the worst made teeth of the set, and in the cases where room is urgently needed, it is seldom indeed that their permanent preservation is possible. I am firmly convinced that the removal of these teeth at the epoch named is more beneficial than that of any others in causing an equal and sufficient spreading apart of all the teeth and preventing the evils of crowding. The operation of filling and polishing the contiguous surfaces of incisors and canines as a most effectual means of cutting short the progress of incipient caries in crowded jaws is too well recognized to need comment.

The regulating of teeth by means of mechanical apparatus may be of service in overcoming the cause of caries under discussion, but in the use of apparatus we must be on our guard lest we excite the very mischief which we desire to prevent. Regulating plates should not be allowed to chafe the teeth; above all, they should never be allowed to remain in place more than a few hours at a time; they should be removed at frequent intervals and thoroughly purified; whilst with equal frequency the teeth should be well brushed with an antiseptic tooth powder, and thoroughly cleansed from the coating of food débris which is invariably retained upon their surface by the plates.

THE ETIOLOGY OF DENTAL DECAY.

By Geo. Watt, M.D., Zenia, Ohio.

(*Continued from page* 908.)

A carefully prepared paper was read on "The Etiology and Pathology of General Diseases," at the annual general meeting of the Association at Liverpool, by Henry Sewill, M.R.C.S., L.D.S., England. In reference to caries he says: "Caries must be defined as a process of disintegration, commencing invariably at the surface, and proceeding inwards, affecting dentine more rapidly than enamel, and due entirely to external agencies. We are now positively assured of the truth of these facts; that caries is not an inflammatory change; that it does not depend upon any connection, vascular or nervous, with the rest of the body, and that caries may occur, even in an extracted tooth, which is retained in the mouth by artificial means, as on a denture or pivot."

Further along he says: "The active agents in caries are acids and living organisms. The acids—malic, butyric, and acetic—are the products of chemical change and fermentation set up in fragments of organic matter—food, mucus, and epithelial scales—which are commonly present in the mouth."

A casual remark often shows an opinion or an error as well as a laboured essay could. Mr. Sewill has this remark: "That the acids alone do not produce all the phenomena is obvious from the fact that dentine, after perforation of the enamel, is the favorite seat of caries; whereas acid, acting alone, would most rapidly attack the enamel. It is equally inconceivable that micro-organisms could gain access to the dentine without the assistance of an acid capable of perforating the enamel." A little further on he says: "The initial stage of caries undoubtedly depends greatly, if not entirely, on the action of acid, and this stage, let us note particularly, may be induced artificially by introducing a pellet of cotton wool between two teeth and allowing acid to collect in and to act upon the adjacent enamel."

In the first quotation here the writer has forgotten that enamel is much harder than dentine, and cohesive attraction is one of the modifying circumstances of chemical affinity. Marble and chalk are chemically the same, and an acid acting on them yields alike results; yet it acts with much greater energy on the chalk simply because less cohesion is to be overcome. This quotation, too, shows that the writer fails to recognize the facts that acids are nascent when they cause caries directly. The experiment with the pellet of cotton wool is instructive; but if he had said "allowing acid to" be *formed* in it, rather than to collect in it, he would have been nearer to the correct idea.

The writer is troubled about the color of caries. The black variety is not mysterious. The organic matter is "carbonized," as is a cork sometimes, by sulphuric acid; and animal charcoal is black. And if we take the most common variety of caries, when recent, it is the color of the gelatinous portion of the dentine. This remaining is gradually darkened by oxidation, just as decaying leaves, etc., are darkened from the fact that their carbon is more slowly oxidized than are the other constituents. But I have dwelt too long on this paper, and so it must be abandoned for something later, though some of its other points are worthy of notice.

The last paper it is proposed to notice, in this connection, is from the pen of Dr. C. T. Stockwell, of Springfield, Massachusetts, and is entitled "Etiology of Caries. Acids or Germs; Which?" It was read before the New, England and Connecticut Valley Dental Societies, October 1882, and is, accordingly, up with the times in reference to the principles held by the author.

It is feared that Dr. S. is not well-up in the history of professional opinions, for he calls the acid theory, or rather, I suppose he means, the chemical theory, "the old dusty creed," when really it is quite new, never thought of, perhaps, till within the memory of some now living; and the other theory, viz: that dental decay is caries, similar to caries in other bony tissues, has been held ever since the dawn of medical science. Which is old? Which is dusty? There are not many who are likely to believe that dental decay is an ulcer, even though all the force of the *New England Journal* shall continue to eulogize Prof. Mayr, who is trying to revive this almost obsolete idea. Dr. S. tells us that "this conclusion of Prof. Mayr is based upon a study of chemical facts in relation to dentistry covering several years, during which a large number of experiments and chemical tests have been made, in which it was found in every case 'that the lime salts are only slightly diminished in the decayed mass compared with the healthy tissue.'"

Now which variety of decay? Here are experimenters eulogizing each other, and yet so much in the dark that they regard it as of no importance in detailing experiments to give the principal facts. No one expects to find the lime salts removed from black decay, if he has studied the chemical theory; nor does he expect to find the reactions of acetic acid. But Prof. M. seems to think a mare's nest (no play on words) is found because he finds the lime salts, without acetates, in a case of black decay. He did not intend to tell us that it was this variety of caries, but the fact slipped out.

Dr. S. boasts of the "several years" of Prof. M's researches in dental chemistry. How many make several? Not very many, as we know; but Prof. M. will not allow that to count, for he insists, if I understand him, that all the long years of Prof. Buckingham's researches amount to nothing. What great discoveries has Prof. M. made in these several years? Great results ought to be heard of, especially since Dr. S. places in his hands nearly every tooth he extracts, and he extracts sixteen at once, or in a brief period. But again let me remind you, that neither Dr. S. nor Prof. Mayr seem to know that there is more than one variety of decay, though as you all know, the black and white decays are not more alike than a boil and a blister.

But I asked as to Prof. M.'s great discoveries. Here is one: "The tooth will be destroyed if either of the *outer* forces become too strong relatively to the *inner* forces, or if the *inner* forces *become too weak*." Further down he says, "About the *septical* theory and its principles there is no longer ignorance among us. We may consider the facts settled. But why does not healthy tissue become attacked like diseased tissue? To explain the fact, we have again to go back to the simpler forms of bioplasson to amœbæ. Amœbæ may live in water containing bacteria; but why? Simply because they eat them up; or, to express it more scientifically, the bioplasm of the bacteria becomes a part of the bioplasm of the amœbæ, the latter being in excess and a more stable compound. The same will happen with a tooth; *bacteria may enter healthy enamel;* their number, from the great density and closeness of the net-work of the enamel, is only small at one time, and the fibrils within, being on guard, so to say, do nothing more or less than dispose of the entering bacteria, by way of *assimilation*. Thus, as long as the fibrils prove stronger, the bacteria will not gain entrance; but let the fibrils become weakened, and they will crowd in. The danger of a part of the enamel being taken away lies in the fact that the dentine, being provided with much wider canals, the bacteria may enter in much larger number, and thus over power the fibrils of the dentine."

I have quoted this at great length. It is either the best specimen of sharp-looking extant, or it shows what small holes things will crawl into for the sake of a pet theory. Prof. M. has found a hole to retreat into, smaller than those in the enamel through which the bacteria crept. Even Dr. S., though his eulogist, seems discouraged about following him through the little holes. He says, "The statement of Prof. Mayr, also regarding the possibility of bacteria entering 'healthy enamel' seems, in the light of these investigations to be less visionary than many supposed."

Why speak of the *possibility* of the bacteria entering healthy enamel? Prof. M. teaches us they "may," and that there is nothing to hinder, except when the "fibrils" are strong.

Some have stupidly (?) thought the enamel is a protection to the dentine beneath. It seems the fibrils are the sentinels on picket duty—"being on guard," as Prof. M. puts it. Dr. S. speaks of the entrance to the tubuli being barricaded by mineral substances; but what a mistake, when Mayr's bacteria crawl right through them. The fibrils are the barricades; and a course that tends to invigorate them and sharpen their teeth is the proper prophylactic treatment. Nor is it a mistake, as has been intimated, to put in the limesalts, even if acids are the main source of danger; for the teeth were made to grind the food, and fibrils would not answer. Besides, in the structure of the human body, all is made for use—all is made with reference to life. Nature has not formed the human frame for death—has made no provision for it.

Near the beginning of this paper I spoke of optical delusions, and that the tendency thereto increases in proportion to the squares of the powers used. This may explain the many contradictions. They are very abundant with the advocates of the germ theory, who claim to tell just what they have seen. We have room to notice but one now: Dr. Miller, of Berlin, claims to have specimens "bored through and through" by leptothrix, as well as by other micro-organisms; while Mr. Sewill, of England, says the leptothrix, "never penetrates below the surface." I am tempted to add that Mr. Sewill says "it is inconceivable that micro-organisms could gain access to the dentine without the assistance of an acid capable of perforating the enamel," while Prof. Mayr sees the bacteria walking right in and damaging the fibrils if they happen to be in delicate health. Seeing the bacteria going right through healthy enamel is the grandest discovery of modern microscopy.

(*To be concluded*).

CARBOLIZED IODINE.—C. Scherk recommends as better than iodine alone 10 gr. iodine, 5 gr. carbolic acid, 2 drops of oil of peppermint. The carbolic is rubbed with the iodine and the oil then added. The disagreeable odour of the iodine is completely concealed and is not apparent even when healed.

CLINICAL STUDIES ON THE COMPLICATIONS OF THE ERUPTION OF THE TEETH IN MAN.

By Dr. Magitot.

(*Continued from page* 918.)

B.—PATHOGENESIS.

The mechanical production of the complications of the eruption of the wisdom tooth, rests, as we have already said, principally upon the want of agreement between the size or direction of the tooth, and the seat secured for its exit.

This remark furnishes at once the reason for the extreme rarity of the complications met with in the superior jaw, so frequent in the inferior. For the first, indeed, the peculiar situation of the maxillary tuberosity, free behind and at the sides, offering no obstacle to the eruption; though it does not always occur that the wisdom tooth of the superior jaw is normally developed; this signifies little, and frequent absence of complications may be noticed here as being conformable to the hypothesis of Darwin. Besides this, it often happens that this tooth forces its way, either from behind or outwardly and comes in contact with the mucous membrane, on account of which it occasions certain unimportant lesions and to which we shall revert later on.

These complications are so rare, that the majority of writers have always limited themselves to describing the complications of the wisdom tooth eruption, with relation exclusively to the inferior jaw. It is indeed, with regard to this latter, that the conditions are quite different and present themselves besides under most varied aspects.

1⁰ In the first place, a wisdom tooth of normal size or even relatively small, finds an insufficient place for its eruption.

2⁰ In the second place, there may be experienced a previous anomaly in its direction, and it may thrust itself either behind towards the base of the coronoid process or outwardly towards the mucous membrane of the cheek, or last, in front obliquely or even horizontally, coming in contact by its grinding surface with the posterior face of the second molar. This disposition, which we have frequently met with, and have given divers examples of, has been pointed out by many authors. M. Gaillard in a recent work, has cited several, and M. M. de Quatrefages and Henry have described a case in a Melanesium jaw. The Vrolik museum of Amsterdam contains a similar example.

Meckel and Tomes, each cite a case, in which there was a complete reversal of the inferior wisdom tooth, of which the roots were directed upwards and the crown downwards.

3° It may, in consequence of a rarer anomaly, present a growth of such size, that the place which would have been sufficient for a normal tooth is insufficient to receive an organ become monstrous. Tomes and Forget have cited examples and we ourselves have met with such.

4° Again, obstacles of another nature, may be produced by the maxillary bone itself or by the coronoid process. In the first case, pointed out by Jourdain, the alveolus is closed by the complete contact of two bony plates of the dental arch. In the second, the peculiar disposition of the coronoid process occasions resistance.

This explanation has been reverted to, above all by Löwenhardt, who has declared that this eminence sometimes forms with the maxillary bone an acute angle, while its anterior edge becomes convex in front. It is to this especial anomaly that the facts of the development of the wisdom tooth in the thickness of the bone, where it may form a cyst or an odontoma are due. It is also to this cause that the curious facts of the evolution of the wisdom tooth, appearing even in the sigmoid notch should be attributed. Saunders has brought forward an example which figures in the Odontological Society of London, and of which we have re-produced a drawing. Such are the different aspects which affect in their pathogenesis, the deviations of the wisdom tooth, and become the cause of various disorders. But before studying these in their morbid manifestations we will say a word about their general occurence and the ages at which they appear.

With regard to their frequency, statistics presented before us in 1876 by Dr. David, then our clinical chief, have given the following results :

From 100 observations, taken by the students in medicine, who freqnented the Clinique and who had been questioned with the greatest care, 75 examples were brought forward, which presented, or had formerly presented, complications at the time of the eruption of the wisdom tooth, an abstract being made elsewhere of the nature and the gravity of these complications. This proportion, so considerable, enables us to say that the morbid manifestations of this period are the rule in our populations—a new fact in confirmation of the Darwinian theory.

But if we seek to establish the relative proportion of these complications between the two jaws, we find that they are very rare in the superior, as two cases only out of the seventy-five have been noted.

With regard to the age of the subjects most attacked by these disturbances, we have remarked that such are to be found most frequently from 19 to 25 years. Toirac has pointed out a case of a man of 45 years; Jourdain, a woman of 50 and a man of 60; M. Richet, a patient of 66 years; and we ourselves quite recently have met with similar complications in the service of Velpeau in a woman of 65 years, caused by the eruption of two superior wisdom teeth. But these are, it is hardly necessary to say, complications incident rather to slow dentition than to disturbances connected with eruption.

The influence of sex has been invoked by M. Heydenreich, who finds a greater prevalence of such disorders in woman than in men, and attributes it by following a very rational chain of argument to a predominance of prognathesm in the former.

FORM AND NATURE OF THE COMPLICATIONS.

Considered generally, the complications provoked by the eruption of the wisdom tooth are very numerous. A methodical division of these phenomena is by no means easy, and not infrequently a complication which in its early stages manifests certain distinct characteristics, is subject to modifying influences by passing through successive forms. As a classification is always necessary to a description we have adopted the following:—

1° Inflammatory complications which are capable of subdivision into complications of mucous membrane and bony surface.

2° Nervous complications: Neuralgic disturbances of the organs of the senses—reflex phenomena.

3° Organic complications which include follicular cysts of the wisdom tooth—odontomes and neoplasms.

INFLAMMATORY COMPLICATIONS.

Complications of Mucous Membrane—The complications of the mucous membrane in consequence of the eruption of the wisdom teeth, are extremely frequent. They begin with simple irritation of the gingival mucous membrane and terminate with inflammation, ulceration and gangrene. Sometimes the local disturbance is isolated; at others it is complicated by neighbouring disturbances more or less acute. In all cases this mucous membrane form of complication is by far the most common; for in the statistics of Dr. David cited above they represent in the 75 per cent. of the complications due to this eruption, a proportion of 70, which gives in the total sum of such disturbances about 93 per cent. In the simplest cases, the mucous membrane in the region of the wisdom tooth, is only raised, slightly swollen and painful. It is a slight or sub-acute gingivitis. The disturbance without passing unperceived, only causes a slight irritation, and the tooth quickly overcoming this obstacle, appears in the midst of some swollen gum having the appearance of a fleshy gumboil. The presence of this swollen gum which remains for a period more or less long, in contact with the grinding surface of the tooth, form in consequence certain hollows which becomes rapidly filled with foreign matters—food débris, etc., and become thus a fruitful source of the production of caries. It is by this means that premature lesions are produced in the wisdom tooth, and this has given occasion to superficial observers to affirm that wisdom teeth in their first appearance, evince signs of decay. In the more marked form of gingival inflammation, all that portion of the sub-adjacent mucous membrane of the tooth, is the seat of a real phlegmon in the midst of which is the tooth, which remains imprisoned without any outlet. It is to this kind of complication that Chassaignac has given the name of encystment of the wisdom tooth, in order to distinguish it from the preceding form, which he named *enchatonnement*. This subtle distinction is, however, quite artificial; for the first form generally merges into the last, and after the spontaneous or assisted opening of the abscess, the enclosed tooth obtains external egress. The phlegmonous form consists of a real abcess of the follicle, and it is in this case that the local irritation affects ordinarily the adjoining parts. Sometimes, it is a gingivitis which extends the whole length of the arch, and sometimes to the median line; sometimes it is a tonsilalitis of which the peculiar characteristic is an extreme obstinacy of which the cause remains unknown. Toirac cites a very remarkable observation made by Dr. Fiard. The inflammatory process of the tonsil extends to the pillars of the fauces and to the pharynx causing as severe a form of angina. Robert has reported such a case.

However this may be, this form of complication is peculiar to the period of the eruption of the inferior and superior wisdom tooth. For the inferior, the simple eruption of a tooth though normal as to volume and direction may be the cause of it, whilst the superior can only produce this condition when the wisdom tooth directs itself abnormally either outwardly or towards the anterior column. It is confined, for the most part, to this form, so we have restricted ourselves to the complications of the eruption of this last.

(To be continued.)

"PERICEMENTITIS."

By Frank Abbott, M.D.

(Continued from page 893.)

When the tooth is decayed to the pulp, we have direct irritation of that organ. The common practice is to cap such an exposed pulp. I am afraid, however, that it is not as common as it ought to be. From what I see and hear, I fear that a great many men are too reckless in sacrificing the life of the pulps of teeth. Its death is productive of so much trouble and distress, so many alveolar abscesses, so many sleepless nights, and sometimes even the death of the patient, that it becomes a matter of great importance to us and to our patients. Besides, the preservation of the natural colour of the tooth is of paramount importance, particularly if the tooth be in the anterior portion of the mouth. That bluish-grey or greyish-brown colour which a pulpless tooth assumes, is anything but pleasant to look upon. This discolouration is indicative of the putrefaction of the organic portion of the dentine, to which I shall refer further on. That the operation of capping the exposed pulp of a tooth is not always attended with the desired result, I am well aware ; but should the first attempt fail, the capping material should be removed and another trial made ; yes, two, and even more, provided the patient will submit to the long-continued experimentation. If a portion of the pulp unfortunately dies, it should be amputated, and the remainder preserved, if possible, as a portion of live pulp in a tooth will preserve its natural colour. I am aware that this kind of work is very trying to the nerves of the dentist as well as the patient, and perhaps it is not to be wondered at that sometimes endurance yields. and the pulp is devitalized and its removal attempted so frequently.

I had a patient to-day, whose left upper central incisor was pulpless, and had assumed the characteristic grey colour. The right central had some months since exhibited signs of chronic pericementitis, but its colour was good. Upon removing an imperfect filling which it contained, I found that the carious process had penetrated to the pulp, and a portion of it was dead. I removed that portion and made a soothing application to the remaining live portion, in the hope of preserving it.

The preservation of exposed pulps I consider one of the greatest achievements in modern dental surgery.

PUTREFACTIVE IRRITATION.

The general impression is that the cause of all the distress which we call pericementitis is due to the putrefaction of the dead pulp when left in a tooth. But how shall we account for this condition when it occurs after the treatment of such teeth by men who are positive that they have removed every particle of dead tissue? The fact is, that in the hands of our most careful dentists a portion of dead pulp is left in the canals of about one-half of the cases treated. For instance, how much credit would you put in the statement of any man who would tell you that he could, with certainty, always remove the entire pulp from the first bicuspid, or either of the molars in the upper jaw, or from either of the molars in the lower jaw?

It matters very little whether you leave the pulp entire, or a piece as large as the point of a needle in the canal; if that putrifies there is danger, although the initial point is not as threatening. Even though the pulp is removed from the tooth entire, and the root is sealed up as tightly as possible, there is still twenty-eight per cent. of the dentine dead and undergoing slight putrefaction, unless every particle of air is excluded, which is seldom, if ever done. Now if the patient takes a severe cold by sitting in a draft, or should bite upon such a tooth a little severely at any time, producing sufficient irritation to cause a determination of blood to the part, is it at all unreasonable to suppose that the living portion of the cementum, coming as it does in direct contact with this putrifying portion of the dentine, will absorb an excessive amount of it, producing an irritation which is directly conveyed to the pericementum? I have no doubt that thousands of cases of pericementitis which have puzzled the brain of many a good and faithful dental surgeon may be accounted for in this manner.

Many methods are resorted to, and many materials used to relieve this painful condition, among which may be mentioned counter-irritants, such as a small mustard or capsicum plaster, the application of leeches, of cantharidal collodion, aconite and iodine, or a piece of hot fig or raisin. I have obtained more immediate and lasting relief from the use of the two latter than from any other remedies I have ever tried. The aconite used in this mixture is a saturated tincture, and made by only one man, so far as I know—T. J. MacMahan, 142, Sixth Avenue, New York. This, mixed with an equal amount of tr. iodine, is used. It may be painted on the gum over the affected tooth, every three hours, until the inflammation is checked. Recently, however, I have been in the habit of recommending the heating of the inside of a raisin from which the seeds have been removed, as hot as it can be borne' and placing it on the gum over the root, and repeating this every half hour. In this manner I have reduced the inflammation in many very obstinate cases. I have used the aconite and iodine for fifteen years or more, it very seldom failing to give relief if applied before suppuration takes place.

DIRECT IRRITATION OF THE PERICEMENTUM ITSELF.

This takes place in several different ways. Perhaps the most prolific cause, however, is that of the collection of tartar around the roots under the gums. That brings me to a point which is very interesting. It is a question you have, doubtless, asked yourselves dozens of times : Where does this calcareous deposit come from ? You all very well know that the function of the pericementum (periosteum) under irritation is to secrete and deposit lime-salts ; for example, in the repair of fracture, and the reproduction of bone. As soon as the slightest deposit takes place under the free margin of the gum, or an inflammation of the gum from any cause deprives the part of its proper nourishment, the tissue becomes detached from the neck of the tooth, thus opening a pocket for the reception of foreign substances, which may come in contact with the pericementum and produce an irritation which shall cause a deposition or outpouring of lime-salts, and these readily attach themselves to the irregular surface of the cementum. This is the condition when that excessive ulceration takes place that is known as "pyorrhea alveolaris."

This is not an original idea of mine, but should be credited I believe, to Dr. Niles, of Boston.

Now, the removal of this material from around the root of the tooth is in many instances easy, and all that is necessary to relieve the pericemental disturbance. Like many of my brother practitioners, I was in the habit, until within the past two years, of using antiseptics, stimulants and astringents in all such cases, but for the last-named period I have depended in almost every instance upon the thorough removal of all deposit from the roots, and trust nature to restore the parts to health. I prescribe for the patient a saturated solution of chlorate of potash in cold water, and direct him to rinse the mouth with it every hour, if a severely inflamed case ; three or four times a day if the attack be mild. The success I meet with in this treatment warrants me in recommending its trial.

TRAUMATIC INJURIES.

We produce pericementitis by moving teeth about for the purpose of obtaining room to fill, and also from long and too severe malleting upon dead teeth. In very large operations it would perhaps be well to adopt the new mode of putting in filling by the Herbst method ; rubbing them in with a small burnisher. In many cases where large operations are to be performed in molar teeth, it is advisable to use amalgam or some cement, rather than risk hard and continued labour upon gold fillings. Eisfelder's cement, a German preparation, is the most perfect and hardest cement for the teeth I have ever used. You may not be able to get it here, but can order it from Germany. Some of these cements may be used to advantage, rather than gold filling, in discoloured teeth, or where very much of the crown of a molar or bicuspid has been broken away. By placing a small layer of gutta percha at the cervical portion, large appoximate cavities may be successfully filled with it.

MERCURIAL POISONING.

Salivation very frequently, if not always, produces pericementitis. The organic principle of saliva (ptyaline) acts as a poison to the mucous membrane of the mouth, when the saliva is secreted excessively. This produces an inflammation of the gum around the teeth, by which its proper nourishment is cut off, and its detachment from the necks of the teeth is the consequence. This inflammation extends to the pericementum entire, and the loosening, and perhaps loss, of the teeth is the result. This is often the beginning of pyorrhea alveolaris.

In mercurial poisoning, the treatment consists in keeping the teeth as clean as possible, and rinsing the mouth every fifteen minutes or half-hour with a solution of chlorate of potash in cold water, and touching the gums with tincture of iodine, provided the inflammation does not subside readily. I believe this to be ample treatment to relieve disturbances of this kind.

FUNCTIONAL IRRITATION.

Uterine irritation during gestation or the menstrual period may produce pericementitis, either in a living or so-called dead tooth. A living tooth may be carious, or denuded of its natural covering at the neck. It is no uncommon thing for ladies to suffer severely at such times ; as they recover from that the pericementitis subsides. When treatment is, however, demanded, the painting of the gum once with the aconite and iodine preparation will usually be sufficient to relieve the patient, provided the tooth is a pulpless one. This relief may be permanent, or the inflammation may return again within twenty-four hours, a week, or at any subsequent time. If the teeth be alive and carious, fill with gutta-percha temporarily. If the necks of the teeth are exposed and irritated, use the soda solution.

HYPERTHOPHIES.

Exostosis is known as a condition of formative irritability, i. e., the pericementum is in a low, chronic state of inflammation, which results in an increase in size or thickness. As the cementum increases the surrounding alveolus must of necessity be absorbed. When pericementitis is developed it is in consequence of this absorption going on more slowly than the tumour grows. Pressure upon the pericementum, and consequent inflammation, is the result. When a diagnosis of exostosis is made, the only relief consists in extracting the tooth.

CLOSURE OF THE JAWS.

Dr. John J. R. Patrick, Belleville, Ill

(*Concluded from page 904.*)

June 6th.—Patient very cheerful, capacity of the mouth greatly increased, extracted the superior right *dens sapientiæ*, which was much decayed. Cut the cicatrix from the tuberosity of the superior maxilla, dressed with carbolized glycerine, as before. August 29th.—Being absent from the State, did not operate since the sixth of June. The patient's mouth in excellent condition, can open the mouth three-fourths of an inch between the incisors, and has good use of the muscles concerned in mastication. The last incision partly reunited, owing to the difficulty of keeping the dressing in place. Cut the cicatrix from the gum of the *dens sapientiæ* of the lower jaw, packed in the dressing. Used a thicker wedge, with corresponding hinge on plates, and instructed to continue their use.

September 27th.—Operated on mouth twice during this month and removed all the remaining teeth and fangs on the upper jaw, they being either out of position or so badly decayed as to forbid their longer retention. The superior incisors and right canine were sound, but too much worn to retain. Took an impression of the upper jaw, and made a gutta-percha plate to wear as a shield to receive the pressure of the wedge and plates. Continued the use of plates and rubber wedge. During the month of October operated twice, and added gutta-percha to the plate each time, in sufficient quantity to keep the incised wound apart. Dressings discontinued, with the exception of a simple collutorium composed after the following formula :—

℞	Glycerine	ʒ iii.
	Acidi Carbolici	gtt iv.
	Tinct. Myrrhae	ʒ iii.
	Tinct. Cardamomi	℥ ii.
	Aquæ Rosæ	℥ v.
	M.	

Used in the proportion of one teaspoonful to eight ounces of water, as often as seven or eight times during the day.

November 15th.—Operated once, adding gutta-percha to the plate as before. December 17th.—Operated once, added gutta-percha to the plate. January 14th, 1869.—Added gutta-percha to the plate on both sides, so as to distend the cheeks. The Slayton preparation of gutta-percha is admirably adapted for this purpose, as it slowly yields to the opposing pressure, and thereby lessens the amount of irritation, and by the constant use of a proper mouthwash, little or no inconvenience is experienced. March 4th.—Cut cicatrix on the lower jaw, and increased the size of the plumpers on the gutta-percha plate. April 10th.—Removed some fangs of teeth from the lower jaw, instructed patient to continue the use of large wedge and plates.

May 16th.—Removed all the remaining teeth and fangs from the lower jaw, and took a new impression of the upper jaw, using the gutta-percha plate to hold the plaster, first napping it with cottonwool.

June 20th.—Inserted superior full upper set of teeth on vulcanized rubber, and took impression of the lower jaw. Made a gutta-percha plate the following day, with a strong iron wire imbedded in the gutta-percha over the alveolar ridge. Cut cicatrix on the lower jaw and inserted the gutta-percha plate, with instructions to use a thick wedge, retaining the upper teeth and lower plate in place.

July 21st.—The patient can open and use her mouth in a natural manner. Took an impression of the lower jaw with the gutta-percha plate, in the same manner as the upper. Made a full lower set of teeth on vulcanized rubber and inserted them the following week. With the upper and lower sets in place the patient could open her mouth, so as to leave a space of nearly one inch between the incisor teeth of the upper and lower jaws.

The case of Mrs. Elizabeth P—— was brought before the St. Clair County Medical Society, at its monthly meeting in September, 1869—the Society, however, has no published transactions. It is now fourteen years since the patient was discharged, and I have examined the mouth recently, and find no traces of inodular tissue present.

In the December following I examined the patient's mouth, and found that she could open her mouth so as to leave a space of one inch and a quarter between the incisor teeth without effort. Upon removing the artificial teeth I found the inodular tissue that had been left adherent to the gum and cheek greatly diminished by the pressure of the plates, and healthy membrane covered the sulci left during the several operations both above and below. The parotid gland appears to be atrophied, and its duct has disappeared with the inodular tissue. The sensory nerves are slightly impaired, as there is some diminution of sensibility; but the motor nerves are in good condition, as she has the power to raise the commissure of the lips, and all the movements necessary for mastication and expression.

RESUME.

In reviewing the operations for permanent closure of the jaws from cicatrix, recorded in this essay, we find Professor Esmarch cutting subcutaneously in front of the cicatrice and removing a portion of the jaw, thereby forming a false front. Professor Rizzoli, of Bologna, cutting through the jaw in front of the cicatrix with a powerful pair of forceps introduced through the mouth. Both of these methods, if successful, restore but partial usefulness to the healthy side, while the loss of sensation of the branches of the facial nerve by the knife, and the inferior dental nerve by the saw or forceps renders the mutilation on the afflicted side complete; and in cases where both cheeks are involved, the operation would be worse than useless. It is also well enough to observe that in the hands of French surgeons, both these modes of operation have met with poor success, since in cases operated on by both methods reunion has taken place. Professor Gross, of Philadelphia, who has written much on this affection, operated on many cases by freely dissecting the cheeks from the jaws, and forcing the mouth open with a screw. In his hands, he confesses it a failure, or at least affording but temporary relief.

Christopher Heath, F.R.C.S., of England, who has written the best, if not the latest, work on diseases of the jaws, operates in the same manner as Professor Gross, with the addition of supplying silver shields to keep the wounds apart. The only drawback to this method of treatment (to use his own words) is the amount of pain and intense suffering the patient of necessity must undergo in after treatment for months after the operation. The cases that Mr. Heath has placed on record show that his mode of operating is precisely the same as that pursued by Professor Gross, and all the success following the operations in Mr. Heath's cases is wholly due to after treatment, *i. e.*, the interposition of metal plates or shields between the cheek and alveoli to keep the severed cicatrix apart. The two cases which I have presented demonstrate the possibility of preserving the contineity of the jaw, while it obviates the necessity of inflicting pain, and if the heroic use of the surgeon's knife cannot be too radical in many cases submitted to his skill, it is equally true that moderation and caution are indispenable in lesions of a local character in which it is unnecessary to encroach on tissue that is not involved.

The conditions exhibited during the treatment of these cases presented from my own practice, lead me to the following conclusions:—

1st.—That small wounds heal with less inflammatory reaction than larger ones, and that only in proportion to the amount of inflammation do granules in granulation become largely developed, and in proportion to this development do mucous membranes lose their normal character.

2nd.—That glycerine as a dressing excites the mucous follicles to a healthy action and promotes the formation of mucous membrane.

3rd.—If the wound is small and kept permanently apart, with a non-irritable substance, inodular tissue cannot possibly form.

4th.—If the patient is in a healthy condition, nature will progenerate new and healthy tissue, if not dealt with too harshly.

Thus it will be seen that in all cases such as I have presented, prudent, conservative surgery is required to lead them to a favourable termination.

British Journal of Dental Science.

LONDON, OCTOBER 15, 1884.

WHO SHALL BE OUR LEADERS?

"Whatever is, is best" may be an excellent motto for a Conservative Club in a remote country town, but it is not one which recommends itself to the average business capacity of the XIXth century-man. "What we want, sir, is progress" as a transatlantic philosopher is reputed to have thundered forth. And it is so. The dentists of to-day have many interests, lines of thought, courses of action which were wholly out of the grasp of a generation or two ago. These "immeasurable possibilities" are not always recognised by the mass of the dental profession.

There are, however, those who do recognise and fully appreciate them and would turn them to account both on their own behoof and on that of the "mute inglorious Miltons" who neither soar nor desire to soar.

Hence the British Dental Association. The organisation of the Association practically vests its executive administration in the hands of a few men. This, it is said, is unavoidable, name forty, we are told, and of these you will find perhaps, four will attend meetings and give time, patience and money in furtherance of Association work. The result of this is that the dominant wills can secure a majority, can be certain of a mastery in swaying the Councils.

A state of things such as this of course robs the Association of its value as a representative body. It is urged that the Association represents the L.D.S.'s and the L.D.S.'s represent the cream of the profession. But it is not so. We have as yet not passed the time when a large bulk of the profession registered under the Act as being in practice, still engage actively in the discharge of professional duties, and do not consider themselves in anyway inferior to a man who has scrambled through a College of Surgeons examination. These men are in no way represented and they are loth to bow themselves beneath the Car of the Associational Juggernaut. That practical difficulties exist in the way of allowing every comer to enrol himself among the faithful of the L.D.S. we admit, but another possibility obtains. It is competent for the Association to be on more friendly terms with non-associates, it is even possible for the Association to admit that those outside its pale are capable of ministering to the welfare of the profession. "We cannot move the profession" is often plaintively said by earnest workers in dental ethics, "they are tradesmen at heart and care as much about social advancement and culture as a hen does of swimming after her foster progeny when they betake themselves to the pond." And the allegation possesses more than a semblance of truth. But there is another cause of this failure, it is the want of harmony which exists between the would-be leaders and the profession. The men who can lead are those who can win the sympathies of those they lead. This is emphatically not the case with the Association. There is, or seems to be, an overweening sense of its own importance and a condescending pity for the less fortunate non-associates in all the Association's proceedings. And even further, recent events have demonstrated that the executive does not even represent the Association itself, and is capable of opposing its own judgment to that of the body to which it owes its origin. It would not be difficult to cite modes of action which partake rather of the character of reprisals than aught else, all which are intended to choke out discussion, or activity, which does not find vent through Association portals.

No class of men need leaders more than dentists. Those who regard the Association as the natural leaders do not estimate how narrow is the influence of that body. Unless it can bring itself to look more leniently upon the weaker brethren of the profession and to keep itself and its policy more in accord with popular feeling, it will never furnish leaders. It has happened and to a certain extent now obtains, that there are connected with its Council men whose name and fame are not Associational, and it is these men who by dint of their personal traits have swayed the minds of dentists who are non-associates, but such influence has not in any way been connected with the body to which they owed allegiance. It is only when the Association as a corporate body has earned the good-will and respect of the bulk of the profession that it will find itself able to furnish leaders to the profession.

"JAPANNING."—A Japanese correspondent of the *Pharmaceutische Zeitung* says the "lac" in use is obtained from the milky juice at the Rhus vernicifera. The tree is incised and the juice escapes.

A GOOD TEMPORARY FILLING.—Beeswax and resin in the proportion of 1 to 4 is said to answer this purpose very well.

SUBSCRIPTION DANCES IN BEHALF OF THE NATINOAL DENTAL HOSPITAL.

The first is to take place on the 29th prox., dancing between 8 and 12. Tickets half-a-guinea, or a guinea and a half for the series. If a party of four take tickets the charge is five guineas.

Among the Patronesses and Stewards are several familiar names. We trust the plan will prove a great success and we would remind our readers that they should send for tickets at once. As we mentioned in a former issue it is contemplated that there shall be four dances. As the number of subscribers will be limited, and as the dances are under careful and strict snrveillance there can be little doubt that all will be done to promote the comfort and enjoyableness of the dances. All who are interested in the progress of dentistry must help on the Dental Hospitals. Here is a golden opportunity.

COVERING FOR OXYPHOSPHATE.—A contemporary writing some time back urged the employment of gutta-percha varnish to cover oxyphosphate filling. This plan, however, has not met with general approbation. Roasted gum copal in ether 720, is said to be superior.

A PASTY mixture of beeswax and chloroform also covers oxyphosphate fillings well, and has the additional advantage of not penetrating below the surface of fillings before they are hard, and hence does not impede their setting.

THE USES OF ENGENOL.—Besides being a parasiticide it relieves or even removes the pain arising from exposed pulps. Dr. Harland in his paper at Saratoga says engenol is probably the best-known dressing for slightly-inflamed pulps, he prefers it to iodoform. He washes out the cavity with solution of borax, and then applies the engenol. It may be injected into fistulous tracts and the hole sealed at once; the root should be thoroughly filled.

THE AGE OF PROGRESS.—An imperial decree has been issued in Russia which interdicts all Russian circulating libraries from issuing to subscribers the works of Agassiz, Buchner, Huxley, Lubbock, Lewes, Moleschott, Reclus, Adam Smith, Herbert Spencer, Vogt, Zimmermann, and Charles Darwin. How happy a people are the Russians to possess so enlightened and fatherly an Executive!

SANITAS OIL: ITS USES.—Sanitas oil has been for some time used in general surgery as an antiseptic, although its efficacy has been called in question by some authorities. In dental practice Dr. Harland has found it useful as an injection in pyorrhœa alveolaris, and in alveolar abscesses. He says it is also serviceable in mouth washes, and vaunts its use in the treatment of exposed pulps. To those who dislike the odour of fresh pines, sanitas oil is objectionable. Its smell may be mitigated if not hidden by eucalyptol, engenol, or oil of winter green.

PREVENTION OF BLURRING OF THE MIRROR.—It is said that if a mirror be lightly wiped over with a glycerine cloth, it does not become fogged by the breath.

HYPERSENSITIVE TEETH.—Unslacked lime is said to cure hypersensitiveness of the teeth. Dr. Calvo and Dr. Yarini of Cuba, say they have found it quite beneficial. Just break up a few lumps coarsely, and put in a tightly-corked salt mouth bottle. When wanted, pulverise finely one of these pieces, and place upon the surface to be obtunded; cover with wax. It will produce some pain but this will soon pass away. Its effect does not penetrate very deeply, but it leaves the exposed surface in a nice condition.

THE TEETH FROM A MEDICO-LEGAL ASPECT.—The identification of dead bodies and criminals is sometimes a matter of much perplexity. The features of a dead body may be distorted or destroyed; the clothes changed or unrecognisable; and no ordinary circumstances left to make identification clear. Some such a case occurred in Michigan. A man was found in a lake murdered. As the coroner was about dismissing the case as "unidentified," the neighbouring dentist had the curiosity to look in the mouth. In a moment he said, "I have a chart of that mouth in my office," and though he could not then remember the name, he soon found it by referring to his chart book. It resulted in tracing the murderer. The celebrated trial of Professor Webster dragged its slow length along till his victim's artificial teeth on a gold plate was found where the body had been dissolved in acids. The dentist who made the teeth, after proper reference to models said: "These teeth are Professor Parker's;" and it was a thread which led to other and sufficient evidence to convict the murderer.

Manipulative Miscellany.

All inventions or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

COTTON WOOL HOLDER.

Mr. Rutherford has a new wool holder, designed by Dr. Holmes, and manufactured by S. S. White, which he has adapted to fix on any instrument table. With a bracket-table it is arranged to screw on the side near the bottom so that it rests under the table with its end only presented to the front.

It is in the form of a nicle-plated cylinder about an inch in diameter, and four inches long having an orifice of about half an inch diameter. Within it has a spiral spring, and a disc fitting the cylinder. For charging the end is unscrewed, the wool filled in until the spiral spring is driven home, when the cap may be replaced. As the wool is taken in small pieces, the spring keeps the remainder constantly to the aperture ready for use.

LEMAN'S SUCTION VALVE.

In describing the above in our last issue, we inadvertently mentioned that the specimens seen were mounted in "I.X." pink rubber. We have been requested to correct this statement as they were mounted in American "A.X." pink rubber, which is stated to be a far tougher material. As a pink facing we have used this "A.X." rubber for several years, and can vouch for its excellent colour without solarisation, but of its strength for a whole case we have had no experience.

Abstracts of British & Foreign Journals.

ARCHIVES OF DENTISTRY.

METHODS IN SCIENTIFIC PRACTICE.*

By A. H. Thompson, D.D.S. Topeka.

We are asked to consider, we presume as an antithesis, the methods of savages. Their philosophy tells of a demon, their methods are pursued with a view of exorcising him. All disease is demoniacal, all treatment, is demonology. A little later Erasistratus founding the Empiric school of Alexandria taught experiment and the study of phenomena of nature were alike fallacious.

The scientific method of the XIXth century is believed to be based upon imperfect knowledge. We know effect follows cause, that the cause must be adequate to the effect, but we are compelled empirically to seek cause after cause before we find the cause of any given effect. We are reminded that to be truly scientific needs more than mere technical knowledge, and that only too often technical knowledge is the sole stock-in-trade of the dentist.

Then follows a long dialogue between the "Spirit of Science" and the "Professional Genius." The latter is worsted, being annihilated in the following words: "You must be more modest in your claims * * * what you *don't* know outweighs what you do know. You lack modesty; your claims are greater than your works," et cæt.

We are then told that "The need of the profession of this age is to *know*." It is a common failing to rehabilitate ancient facts as new ideas and hence little of novelty ever transpires. The habilitating process is easier and more showy than original research.

INDEPENDENT PRACTITIONER.

CARE AND TREATMENT OF EXPOSED PULPS,

By B. F. Lucky, D.D.S.

To preserve the pulp it is necessary to ensure general good health. Recently exposed pulps in persons whose health is good can be treated at once, otherwise the treatment must be delayed. Methods of capping vary, oxychloride, sheet-lead, gold plate, cardboard, Cook's cup-shaped platina caps, gutta percha, collodion, shellac, are used as materials. Oxide of zinc and creosote in a thin layer over the pulp, while the cavity is partly filled with oxychlorides or oxy-phosphates. Another method is in cases of non-inflamed pulp recently exposed to wipe out cavities with bibulous paper soaked in oil of cloves and creosote. This coagulates the albuminous matters, and so forms a coating over the pulp while it obtunds the sensitiveness of the dentine. Iodoform paste is placed over the point of exposure, and this is overlaid with a sheet of asbestos felt, which is allowed to overlie the solid dentine. Oxyphosphate of zinc thickened to the consistency of clotted cream is used as a covering commencing at the edges and working towards the centre avoiding as much as possible pressure on the pulp. When the oxyphosphate is hardened sufficiently it may be trimmed enough to allow of a permanent filling over it of gold or amalgam.

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* A paper read before the Missouri State Dental Association.

The formula of the iodoform paste is: ℞ Iodoform, ʒss; Balsam Peru ʒi; Tonka bean (grated fine) q.s.

The iodoform paste prevents all inflammatory action; the asbestos is superior to gutta percha, being less a conductor of heat and more malleable. Further, asbestos does not swell and so press upon the pulp. Recent cases can be treated in one sitting with assurance as to the good result.

In old standing cases an incision is made to effect free-bleeding. This depletes the pulp and relieves tension. The subsequent treatment is similar to that indicated above. A temporary filling of gutta percha and wax is substituted for that of oxyphosphate as it is easily removed, should this prove to be necessary.

In some cases hemisection of the pulp with this treatment subsequently carried out, has led to the salvation of the remaining half of the pulp.

When the cavity is near the pulp a layer of asbestos is often advantageously added, it saves the pulp being affected by thermal changes.

AMERICAN JOURNAL OF DENTAL SCIENCE.

STOMATOSCOPES—MOUTH ILLUMINATORS.

The form invented by Mr. R. T. Starr is thus described:—The lamp primarily consists of a delicate glass bulb, from which the air has been withdrawn and as nearly a perfect vacuum created as possible. The bulb varies in shape, being spheroidal, flat and compass-shaped, and also cylindrical, with a conical termination. Through the thin walls of the lantern run the conducting wires, connected by a carbon arc, on which the electricity centres, and which thus becomes the lamp. The glass lantern is very small; the cylindrical-shaped being scarcely half an inch in length and with a diameter not nearly so great as that of an ordinary lead pencil. The compass-shaped lamp is about one quarter of an inch thick and has a diameter of three-quarters of an inch to an inch, while the spheroidal seems scarcely larger than a good-sized pea. The lamp is attached to a handle from seven to nine inches long and about half an inch thick, through which run the wires connecting the battery. The handle on the lamp can be separated, and thus but one handle is necessary for use with the different forms of the lamps. The intensity of the power, and hence the brilliancy of the arc of light, can be regulated by moving along the handle a ring which connects with the wires. The handle has several joints, and its position can be arranged in almost any way so as to adapt it to the shape of the cavity which it is proposed to illuminate. Mirrors can also be fastened to the lamp and light reflected to places where the lamp cannot be introduced. To prevent the too great diffusion of light and the radiation of heat, the lamp may be partially covered with a hard rubber or gutta percha case.

When the lamp is placed in the mouth of a patient every portion of the throat, even to the lowest parts, and every recess of the upper places can be plainly seen. Placed behind the teeth, the intense light renders not only the teeth, but even the gums above, highly translucent. If the teeth are good and undecayed, no lines will be visible; but the presence of a filling or of the mere beginning of decay may at once be seen. When the lamp is placed within the mouth, and the lips are closed, the entire front structure of the mouth is brought to view. The bone and tooth formations are easily discoverable, and even the interior of the nasal passages. In the same way the instrument is of great value in the treatment of obstetrical disease, and in studies of the stomach. No unpleasant sensations are experienced by patients, even in cases of protracted use, no other effect being noticeable than that which follows the drinking of a hot cup of coffee.

BOSTON MEDICAL AND SURGICAL JOURNAL.

Causes of Discolouration in Gold Fillings in Teeth.

By William Herbert Hollins.

As pure gold is not supposed to discolour, the causes must be other substances ; they may be present in or on the gold foil or be introduced by the operator in making the fillings ; or be present in the mouth itself.

The best way to investigate was to collect the discoloured portions of fillings and analyse them. As yet no satisfactory result has been arrived at. The fillings themselves were next examined. Iron, silver, tin, and mercury were found. How did these metals get into the fillings? Samples of gold foil were obtained from the prominent makers, and analysed. These analyses showed that none of the samples were pure. This was unexpected, as the makers guarantee absolute purity. Silver was found in every sample and iron in some. Extensive analyses made by the same chemist a year later showed the same results. The mode of preparation shows how impurities creep in.

The gold out of which foil is made is the mint gold, containing about two parts in a thousand of impurities. The makers dissolve this in aqua regia, filter, precipitate with ferrous sulphate, or more rarely with oxalic acid, wash the precipitate, melt it, and after casting roll to ribbons between steel cylinders. It is then beaten to the required thickness between pieces of glued skin, which are never clean.

Gold in this form plain foil is not in the market. To get this plain foil into the numerous varieties required by those who fill teeth, it passes through several processes and then becomes soft gold, cohesive gold, gold cylinders, gold blocks, gold pellets, etc., etc.; indeed one maker advertises over fifty varieties.

Cohesive Gold: Plain foil is heated (usually on an iron plate).

Soft Gold: Mode of preparation doubtful, as makers of foil have their secrets, but as surface impurities have been found on this kind of foil it is probable that in some cases, the softness is due to those impurities which prevent two surfaces of this gold from uniting, and thus produce the so-called softness.

Corrugated Foil: Alternate sheets of gold and thin paper are made into a pile, placed between two pieces of iron and heated in a furnace till the paper is consumed. The sheets of gold are then separated, the ash of the paper removed as much as possible, after which the leaves are placed in books, or used in the manufacture of gold blocks, gold cylinders, gold ribbons, etc., etc.

Gold Blocks, Gold Cylinders, etc: These are the forms of gold in most general use. To make them the foil (usually the corrugated kind) is subjected to various rolling, pressing, and cutting processes by iron machinery.

This description shows how easily impurities may be present in the gold.

Silver, which is always present in the gold before refining, is almost sure to be present after the process. Iron is likely to be introduced from the ferrous sulphate, from the mould, from the steel rollers, from the plates on which the gold is beaten, from the hands, from the machinery used to form it into pellets, cylinders, etc. Other impurities are almost certain to come from the skins used in beating, from the paper used in corrugating, and from the dust of the shop.

To test whether impurities could be introduced by a careful person in making fillings, the following experiments were tried. Plain foil was used, and contained only a small amount of silver.

1st experiment: Foil prepared by cutting with steel scissors, heating on iron, handling with steel tweezers, condensed with serrated steel pluggers, burnished with a steel burnisher. Analysis showed that iron was present in these fillings.

2nd experiment: The same foil was treated as before, only iridium instruments were used instead of steel. Iron was found in these fillings.

3rd experiment: The same foil was cut with bamboo, handled with gold tweezers, heated on platinum and condensed with iridium points, and burnished with an agate burnisher. No iron was found in these fillings.

Thus far the only metals whose presence we have accounted for are iron and silver. How came the tin and mercury in the fillings?

Most dentists use amalgam. This remains on the instruments in minute amounts, often invisible; and when by accident or otherwise the same burnishers perhaps are used in making a gold filling, a little of the amalgam gets upon the surface, showing itself after a time as a discoloured filling. This is a frequent cause of discolouration.

Three ways are suggested in which impurities might get into gold fillings. In the first and second of these ways, impurities are introduced, and with regard to the third way the following may be said: Certain medicines, as iron, when allowed to remain in contact with the teeth, cause a discolouration of the débris which collects about the fillings and on their surfaces. In the mouths of those who smoke, the deposits of epithelial cells mixed with lime and germs which collect about imperfectly cleaned fillings become darkened. This discolouration makes fillings in some cases almost black. Discoloured fillings are due to many different causes. In conclusion, the following suggestions, if faithfully carried out, will do away with some of these causes:—

Demand purer gold from the makers. Use this in the form of plain foil, because this is least liable to contamination.

Never touch gold foil with steel instruments of any kind. If it is neccssary to heat the gold, do this on platinum.

Keep a separate set of instruments for amalgam. Insist upon a thorough cleansing of the mouth every time food or medicines are taken.

DEUTSCHE ZEITSCHRIFT FUR CHIRURGIE.

THE INTER-MAXILLARY BONE AND ITS RELATION TO HARE-LIP AND OBLIQUE FISSURE OF THE FACE.

By Hermann von Meyer.

In order to test the truth of the views recently expressed by Albrecht on the relation of the intermaxillary bones to hare-lip and cleft palate, Meyer has examined 32 upper maxillæ of new born normally developed children, and of fœtuses of the 7th to the 9th month. In no fewer than 17 he found a distinct suture separating an intermaxillary bone belonging to the outer incisor, from one belonging to the inner incisor. In five others distinct traces of such a suture could be recognised ; so that in 10 cases only could no suture be discovered.

Meyer also examined the suture between the intermaxillary bones in adults, and found that if well marked it shows, as a rule, the division between the intermaxillary bones.

The suture runs externally from the incisor foramen at first for a short distance (about 1-10th of an inch), forwards and outwards and then bending at a sharp angle it continues backwards and outwards and ends between the margins of the outer incisor and canine. Posteriorly the two intermaxillary bones end in a point, so that a portion of the upper jaw projects between them.

Von Meyer also confirms the view that the free border of the superior maxilla close to the pyriform foramen is formed just as in mammals by the intermaxillary bone. On the facial aspect, where no suture has as yet been found between the upper jaw and intermaxillary bones it must be looked for in the depression between the nasal bone and the anterior portion of the upper jaw ; it must begin a little above the lower end of the nasal bone, and reach down as low as the alveolar border between the outer incisor and canine. This direction does not correspond with that of the fissure in cleft palate, which also tends to support Albrect's views of the mode of formation of hare-lip between an inner and outer intermaxillary bone.

Von Meyer concludes by expressing the opinion that the median incisor bone is formed by the internal nasal process, and the lateral or incisor by the external nasal process.

Literary Notices and Selections.

INJURIES AND DISEASES OF THE JAWS,

By Christopher Heath, F.R.C.S., Holme Professor of Clinical Surgery in University College, London, and Surgeon to University College Hospital and Consulting Surgeon to the Dental Hospital ; Messrs. J. and A. Churchill (third edition).

A book which has reached a third edition may be said to be usually beyond the scope of criticism; but in the work before us we have to deal with a book which is in many senses new. Twelve years have elapsed since Mr. Heath was called upon to produce a second edition of his book, and in twelve years surgery and pathology make immense strides. The high character for practicableness which Mr. Heath's book has enjoyed from the commencement has been maintained in the present edition. What gives so much life to the book is the number of cases briefly but fully recorded. These cases illustrate a page of dental surgery which may be read with considerable benefit by dentists, since although, they are not called upon in this country to treat such severe forms of surgical malady, yet it often happens that jaw tumours and kindred growths are brought under the observation of dentists in their earlier stages. If dentists were more familiar with the pure surgery of the jaws—as is so lucidly unfolded in the papers before us, they might in many cases send cases for operation at so early a date as to render the prognosis most favourable.

The treatise as it stands is certainly the most exhaustive which has yet appeared. Even though possessing so strongly marked the author's personality, it yet reflects the views alike of the most recent workers in the fields of surgery and pathology.

The illustrations aid the text, and we welcome the addition of several new cuts. In treating of the diseases of the tempero-maxillary joint Mr. Heath has added a chapter of great value to his book. We regret that it was found impossible to deal at greater length with Anchylosis, and rheumatoid arthritis. Perhaps there is no class of cases which give rise to more misery and yet few surgeons can report cases in which surgical procedure has effected any permanent benefit. The curious subject of hypertrophy of one or both sides of the jaw is ably handled. The transactions of the Pathological Society have brought to light the fact that hypertrophy is not so rare as was thought. It would be impossible to deal seriatim with the chapters, many of them really monographs, nor would it be an easy task to criticise the accumulated knowledge gained in so wide a field of clinical experience by so masterly a hand. It will suffice our purpose to indicate that the work under review offers a mass of well marshalled facts useful not only to the surgeon but emphatically serviceable to the dentist. Mr. Heath's connexion with the dental hospitals has kept him awake to the needs and requirements of the dental profession and has enabled him in the present work to supply that profession with a treatise the value of which can hardly be rated too high.

NOTES ON DENTAL PRACTICE,

By Henry C. Quinby, L.D.S.I. London: J. and A. Churchhill. Liverpool: Gilbert Warmsley.

These "Notes" contain much that is good and much that is not good. They give the impression of haste; hurried preparation, hurried seeing through the press. Misprints are a blot upon a book and an author who allows chlroform to appear as cloroform, runs the risk of being thought careless. We commend for careful perusal the chapter devoted to temporary teeth, and the management of children in the dentists' operating room. The remarks are excellent. Gold, the author regards as an "absurdity" when employed for stopping the teeth of children. This is perhaps going too far, although simple and amalgam stoppings are quite sufficient in most cases. There are some good illustrations pointing out the various forms of faulty articulation. Extraction as a means of preventing decay; irregularities; pivoting and amalgam are all included among the "Notes."

Many of the writer's statements are too dogmatic, he, like many others, is unwilling to admit the possibility of the same end accruing from different methods.

We cannot but take exception to the paragraphs devoted to the consideration of anæsthetics. These seem to us to be quite behind the time. For example, we are told that ether and chloroform may be used for children with almost perfect safety, which statement any who administer anæsthetics largely know is not true, as ether is far from a safe anæsthetic for children, its irritating vapour being very prone to occasion spasm of the glottis. Again, ether is stated to cause less excitement in women than in men; a statement quite out of accord with experience.

Nitrous oxide as an antecedent to ether narcosis is practically ignored. If this book sees another edition we trust that this section of it will receive the thorough revision it needs. In spite of blemishes, the result of undue haste in publishing undigested matter, the book possesses merits and will prove serviceable, especially to the beginner or busy practitioner who desires to rub up his past work.

VULCANITE AND CELLULOID

(Instructions in their Practical working for Dental Purposes), By S. Eldred Gilbert, D.D.S., Instructor of Clinical Dentistry, in the Philadelphia Dental College. Philadelphia: S. S. White, Manufacturing Co.:

The aim of this little book is to afford to workers in vulcanite and celluloid rules which will serve to guide them. The work is practical or nothing. It is written by a man familiar with instructing others, and aims at conciseness and utility rather than ornate elaboration of style. Upon the merits of vulcanite and celluloid it is not necessary to enlarge here, the book deals rather with their working than with a consideration of their respective claims for efficiency. The style of the book is straightforward and free from wordiness, the type is excellent, and the illustrations serve their purpose very fairly well. The book will be found useful and to contain many hints likely to prove serviceable to those whose experience in working vulcanite and celluloid has not been extensive.

SYPHILITIC TEETH.

(From the French of Alfred Fournier.)

By J. William White, M.D.

LECTURER ON VENEREAL DISEASES AND OPERATIVE SURGERY IN THE UNIVERSITY OF PENNSYLVANIA AND SURGEON TO THE PHILADELPHIA HOSPITAL.

(*Concluded from page* 853).

In a word on the one hand we had well authenticated syphilis in the father and mother of our patient, attested by the most categorical proofs; and on the other hand specific heredity was shown in our patient by the order of antecedents which it is most common to meet with in such a case. This syphilitic heredity was implied by no morbid manifestation for the moment. The "milky streak" of the superior incisors, and nothing else, called my attention to it. Mark what diagnostic service this little sign may render!

Again, it is very common to find among heredo-syphilitics irregularities of implantation, or of reciprocal disposition of divers teeth. Certain teeth leave their alveoli in a faulty direction, and present themselves now as if twisted on their axes, and now obliquely inclined in different ways. This anomaly certainly is but commonplace, and the only curious feature it offers is the frequency with which it occurs in our patients. One of these varieties, however, is a little peculiar. Thus, the superior central incisors affected with semi-lunar notches frequently present themselves with a convergent obliquity which constitutes one of the attributes of those which are called the Hutchinson teeth.

Secondly, syphilitic teeth are sometimes spaced in a very singular manner; that is to say, separated one from the other by large empty spaces. In a number of patients the incisors especially of the lower jaw, are widely distant from each other, and equally distant from the cuspids. These distances are not always owing to the fact that the teeth, more or less reduced in volume, leave intervals between them proportionate to their small size. They have their origin much more frequently in a vicious separation of the alveoli; that is to say, in a bony malformation, which I should state has not yet been anatomically studied.

The bones, therefore, have sometimes their part in the creation of these divers dental anomalies. The maxillæ exhibit, also in some instances, the influence of the diathesis. We frequently meet with diseased maxillæ in children born of syphilitic parents. M. Parrot has established many a time bony lesions of the maxilla in connection with divers malformations of the teeth. He even lays down the principle "that most diseased maxillæ, those most filled with osteophytes, are those which contain the most seriously affected teeth."* The specimens in his fine collection amply verify the proposition announced by my learned colleague. Other observers have likewise described lesions of the maxillæ in congenital syphilis. Hutchinson, for instance, has seen in a young child a bony lesion on the alveolar brim cause at first a suppurative swelling of the gum, and then the expulsion of four incisors under process of formation; and, finally, the issue of a large sequestrum, formed of a considerable portion of the dental arch†. In another case, related by the same author, the crown of a superior central incisor was thrown out by a suppurative periostitis. It is allowable to attribute to the same influence certain anomalies or arrests of development of the dental arches which we sometimes meet with in the same patients. For example, one of my patients, a young man, affected with divers symptoms of hereditary syphilis, presents at the same time with very well-marked dental malformations a curious disposition of the lower maxilla. The lower teeth, in place of entering within the superior arch when the mouth is closed, overlap and lock on the right half of the superior arch.

***Progrês Medical*, 1881.

†Transactions of the Pathological Society of London, 1858, vol. ix.

Another fact often noticed consists of the malformation of the superior dental arch in the segment corresponding to the incisors and cuspids, so that in the occlusion of the teeth the incisors fail to pass each other, or even sometimes to touch. Moon describes this "defect of vertical development of the superior maxilla" as a peculiarity not uncommonly met with among hereditary syphilitics.* Likewise, M. Lannelongue has related an observation of a heredo-syphilitic patient in whom the superior alveolar brim was scarcely developed.

It appears legitimate to attribute to bony lesions other anomalies of a rarer kind, as for instance, the permanent absence of certain teeth. Sometimes even—but this is exceptional—several teeth default symmetrically. Certain patients present in the lower jaw a large empty space between the permanent incisors and the first molars. This anomaly, according to M. Parrot, is the result of a true atrophic process of the maxilla.†

What, then, is the diagnostic signification of these anomalies? They do not constitute pathognomonic signs of hereditary syphilis. Not one of these signs is sufficient in itself to *prove* a syphilitic origin. All these lesions may be met with, independent of syphilis, on patients unsullied by this original stain. That the causes foreign to syphilis concerned in the creation of these diverse lesions are yet unknown, or imperfectly known, there is not the shadow of a doubt. But these causes exist and are active, and the day will come when they will be described. According to all evidence these lesions result from a nutritive trouble, or from an arrest of development. Who will believe that such lesions cannot result except from syphilis as a unique and exclusive cause? But it is not less certain that syphilis is capable of originating such lesions, and that it is a most active cause in producing them. Clinical observation establishes that, given a patient affected with one of the preceding dental malformations, there is a great probability of meeting with hereditary syphilis in his antecedents. They raise the suspicion of a syphilitic heredity, and direct in this sense the investigations of the clinical student. They do not surely, of themselves, prove syphilis, but they should always cause it to be suspected. It is the work of the physician to ascertain by a general examination of the patients, by a minute analysis of the antecedents, if the suspicion born of this special sign is or is not justified by the clinical facts.

***British Medical Journal*, 1879, vol. ii. p. 689.

† *Op. cit.* *Progres Dentaire*, 1877.

BONY ANCHYLOSIS OF LOWER JAW; REMOVAL OF A WEDGE-SHAPED PIECE OF BONE ON EACH SIDE; RECOVERY, WITH GOOD MOVEMENT OF JAW.

(Under the care of Mr. Sydney Jones.)

For the following notes we are indebted to Mr. W. H. Battle, surgical registrar.—

T. A. H.——, aged eighteen, was admitted on November 22nd, 1883. Family history and previous history good. When between two and three years of age patient fell from a window on to a stone pyramid. The medical man called in did not say for certain whether the jaw was broken or not, but treated the case as if it had been a fracture. When the bandages were removed it was found that the lower jaw was fixed, and the patient was unable to open his mouth; there was, however, a small interval between the teeth in front, and this, it would seem, was maintained by corks in the course of treatment. Nothing more was done until the boy was about seven years old, when he was weekly put under chloroform and his jaws were separated a little each time, and boxwood plugs placed between them in the intervals. This treatment was continued for two or three months, at the end of which time the jaws were separated about half an inch in front, and the upper and lower back molars were just separated, but no more. The boy was, however, quite unable to move the jaw. He discontinued the use of the plugs after about another month, and the jaws gradually began to close again from behind forwards. Six months before admission the bicuspids were separated by about one-eighth of an inch, but afterwards quite closed. About three weeks before admission patient had some severe aching pain extending down the regions of the ascending rami of the jaw, lasting for two or three days, at the same time he noticed that several small pieces broke off his molar teeth; but he had noticed this before the pain, and the same thing occurred a week before admission, when he had a second attack of pain. His lower jaw had not grown in proportion to the rest of the face, and in consequence, it appeared to recede more and more as the upper part of the face developed. Latterly he had taken nothing but liquid food, but when taking solid food he used to rub it between the tongue and the teeth or hard palate.

On admission it was noted that the patient was well nourished, but with a very small chin, and the lower jaw small, out of proportion to the face. He complained of inability to open his mouth. The lower jaw was firmly fixed, and no movement of it could be obtained. The upper incisor teeth projected about half an inch in front of the lower ones, leaving an opening through which the patient took his food. On the right side the upper canine teeth projected in front of the lower one. The first upper bicuspid was wedged between the lower canine and first bicuspid, and seemed to be perfect. The second bicuspid was similarly wedged between the two lower bicuspids, but the greater part of the crown was gone. Behind this there were no teeth in either jaw, the gums being closely approximated as far back as the alveolar processes of the jaw extended; behind the alveolar processes an interval was present. On the left side the upper canine was free and some distance in front of the lower one; the lower canine was wedged between the two upper bicuspids, and all these teeth seemed to be entire; behind these were what appeared to be two other teeth, but whether belonging to the upper or lower jaw was not apparent. As on the right side, the gums were closely approximated, and where the alveolar processes ended a similar interval existed. The two lower central incisors were absent, having been removed whilst the patient was formerly under treatment. Over the chin there was a linear scar, marking the position of the wound received at the time of the accident. On passing the finger backwards along the lower border of the jaw a notch could be felt at a point which corresponded to the junction of the horizontal and vertical portions, the latter projecting downwards a little. There was some pain on pressing over the right temporo-maxillary articulation; otherwise the patient was healthy.

On December 12th, the patient having been put under the influence of an anæsthetic, Mr. Sydney Jones, after removing some of the teeth to facilitate the introduction of the lever between the jaws, cut down on the temporo-maxillary articulation on the right side by means of an incision an inch and a-half in length, and just below and parallel to the zygoma. In cutting down to the bone several vessels were divided and ligatured. After division of the masseter muscle the periosteum was separated from the bone; the condyle being firmly anchylosed to the zygoma and temporal bone, and quite immovable. A triangular wedge-shaped piece of bone, the base of the wedge being behind, was removed from the condylar process by means of the saw. The lower jaw was then found to be moveable to a slight extent, and after the introduction of a lever between the jaws, the interval, which had only been half an inch, was increased to one inch and a half. The lever was then placed between the jaws on the left side, and they were likewise found to be capable of separation. On this account operation on the left side was postponed. A drainage-tube was inserted, the wound closed by interrupted silk ligatures, and dressed with iodoform dressing. Next day the patient complained of pain in both temporo-maxillary articulations, but was otherwise comfortable. Morning temperature 98°; evening 101·4°. On the afternoon of the 14th some slight forcible movement of the jaw was made, and after that, until the 18th, there was a pretty constant oozing of blood from the wound; on that day two of the stitches were removed, and the wound was injected with iced carbolic solution, iced carbolic solution being also used as a dressing. As this did not arrest the hæmorrhage, the remaining stitch was removed on the 19th, and the wound was thoroughly cleansed with iodoform. Before the wound was cleansed the temperature on several occasions had been above 100°, though not higher than 100·8°. On the 17th the patient spat some blood, but on that day only, and there was no clear evidence of its source. On the 20th there was a good deal of pus of a brownish colour, without odour.

From this time the progress was satisfactory; the wound gradually closed with diminishing discharge, and after about a week the patient was able to move his jaw voluntarily, though with some pain in the temporo-maxillary regions, greater on the right side. Chlorinated soda lotion was used as a dressing, and strapping to approximate the edges. At noon on the 21st the temperature was 101·2°; in the evening 100·4°. On the 22nd and 23rd, in the evening 100°. With these exceptions it had been normal or subnormal.

On January 14th, 1883, the wound was completely healed. There was no pain on movement of the jaw, but the range of movement not having been so well maintained as the patient wished, it was decided to operate on the left side. The patient having been again anæsthetised, Mr. Sydney Jones proceeded to perform an operation on the left side similar to that which he had previously done on the right. In making the incision several small vessels required ligaturing, and on separation of the periosteum a similar condition of anchylosis was disclosed. By means of a saw and a bone forceps, a wedge-shaped piece of the jaw-bone was removed, with the effect that the jaws could be separated much more widely than had before been possible, and this opening was further increased by the use of the gag. The wound was closed with silk interrupted sutures, a drainage-tube inserted, and dressed antiseptically.

The patient had a good deal of pain for several days after the operation, and his face swelled much on the left side. On the 19th the stitches were very tense and there was some distension of the wound, which was filled with clot and slightly offensive in odour; there had been a good deal of oozing. Iodoform dressing was applied. The temperature on the 17th and 18th varied from 98·4° to 101·6°. On the 19th the morning temperature was 97·2°, evening temperature 99·6°. Slight oozing continued until the 21st. On the 25th the wound was looking healthy and the surrounding inflammatory swelling was much diminished. The jaw could be moved much more than before operation and without pain. There is slight displacement of the jaw to the right side. By the 31st the swelling of the face had disappeared and the wound was rapidly filling up.

From this time the patient frequently separated his jaws with the handle of a spatula. By this means the range and movement had increased. On February 9th movement was entirely vertical and to the extent of about an inch, no lateral movement being possible. The masticating power was rather feeble, but this also had shown improvement, and the wound had healed. After January 19th the temperature did not exceed 99·8°. [*Lancet.*]

APPOINTMENTS.

Mr. H. J. Moxon, L.D,S., London, has been elected Dentai Surgeon to the London Female Penitentiary, Stoke Newington.

Mr. Isidore Frederick Prager, L.D.S.I., has been appointed House Surgeon to the National Dental Hospital.

Mr. F. C. Wright has been appointed Assistant House Surgeon.

ANSWERS TO CORRESPONDENTS.

Thos. Lloyd: Liverpool.—Thamks, your communication will appear in our next issue.

H. B. Moseley: Leeds.—Your communication is marked for insertion.

J. B. Aaronson—Received.

BOOKS AND PAPERS RECEIVED.

Lancet; British Medical Journal; L'Odontologie; Pharmaceutical Journal; Dental Cosmos; Zahntechnische Reform; Independent Practitioner; Progrès Dentaire; L'Art Dentaire; Chemist and Druggist; Dental News; New England Journal of Dentistry; Monatsschrift des Vereins Deutscher Zahnkunstler; Dental Luminary; Gazette des Hospitaux; Southern Dental Journal; El Progreso Dental de la Habana L'Odontologia; Pharmaceutical Journal. The Mouth and Teeth in Health and Disease, by Morley Dennis.

DENTAL HOSPITAL REPORTS. NATIONAL DENTAL HOSPITAL.

Monthly Statement of Operations from Sept. 1st. to Sept. 30th.

Number of patients attended		1659
Extractions	Children under 14	611
,,	Adults	1008
,,	Under Nitrous Oxide	372
Gold stoppings		60
Sheets of Gold used independent of Pellets		
Other Stoppings		416
Advice and Scaling		152
Irregularities of the Teeth		80
Miscellaneous		177
	Total	2876

Isidore Frederick Prager, House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From September 1st to September 30th.

Extractions	Children under 14	489
,,	Adults	1017
,,	Under Nitrous Oxide	265
Gold Stoppings		73
White Foil ditto		7
Plastic ditto		324
Irregularities of the Teeth		59
Miscellaneous Cases		213
Advice		265
	Total	2712

S. C. Buckland, House Surgeon.

DENTAL HOSPITAL OF EXETER. BEDFORD CIRCUS.

Quarterly Report of Cases, July 1st to September 30th, 1884.

Extractions	Children under 14	308
,, ,,	Adults.	734
,, ,,	Under Nitrous Oxide	48
Stoppings	With Gold	9
,,	,, White Foil	4
,,	,, Plastic Material	172
Miscellaneous	Irregularities of the Teeth, Scaling, &c.	111
	Total	1386

Henry B. Mason, Hon. Sec.

British Journal of Dental Science.

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CHLOROFORM AND METHYLENE.

Notes upon the Methods of their Inhalation, including an Account of a Modification of Dr. Junker's Inhaler.

By Dudley W. Buxton, M.D., B.S., M.R.C.P.
(Administrator of Anæsthetics at the Hospital for Women, Soho.)

A page in the history of surgery, which has undergone strange vicissitudes, has been that which treated of chloroform. In the able report drawn up by a picked Committee acting on behoof of the Royal Medico-Chirurgical Society, and laid before that Society in the year 1864, Chloroform is spoken of as the best agent for promoting anæsthesia. Ether is according to this report, not only far inferior to chloroform, but ought, the Committee thought, to be expunged from the list of anæsthetics. Ether was, at the time this Committee were sitting, administered "not wisely" and certainly not "too well." Clover had introduced his method of chloroforming by vapourising a given quantity of the narcotic in the presence of a bulk of air and this freely diluted chloroform vapour recommended itself strongly to the approval of the investigators. They formulate, as a result of their trials, that the method answered the needs of surgical anæsthesia, and so they found themselves in a position to urge its extended employment even to the ousting of ether. Chloroform administered in this way possessed no horrors, its dangers were minimised, it behaved as an agreeable and safe agent whereby anæsthesia could be certainly obtained and harmlessly prolonged. This is one side of the question. In America at this present time, it is usual to find writers on anæsthesia, taking a position diametrically opposed to that sustained by the Committee of the Royal Medico-Chirurgical Society, and going so far as to affirm that he who obtains narcosis by means of chloroform is convicted of having resort to a reprehensible method, is in short, guilty of malpraxis. Nor is this view confined to America, Rottenstein, writing upon the plans in vogue whereby narcosis is obtained says, "si nous n'avions depuis longtemps renoncé d'une manière absolue à l'emploi du chloroforme comme agent anesthétique." In Germany, however, chloroform is still used very extensively and practically in many hospitals, to the exclusion of ether. In England, we use chloroform very largely and especially in private practice, but there are few who would in the face of the evidence now before the profession, advocate its employment in preference to that of ether. In 1840 the so-called Bichloride of Methylene (CH_2 Cl_2) was discovered, and about 1867 Dr. B. W. Richardson recommended its use as an anæsthetic and made several successful demonstrations of its powers in that capacity. Although methylene has certainly failed as a rival of chloroform or ether, yet many, especially surgeons who are in the practice of performing ovariotomies, still insist upon its value. Quite recently its sponsor, Dr. Richardson, writing in his paper, the Asclepiad, has defended methylene with more or less success.

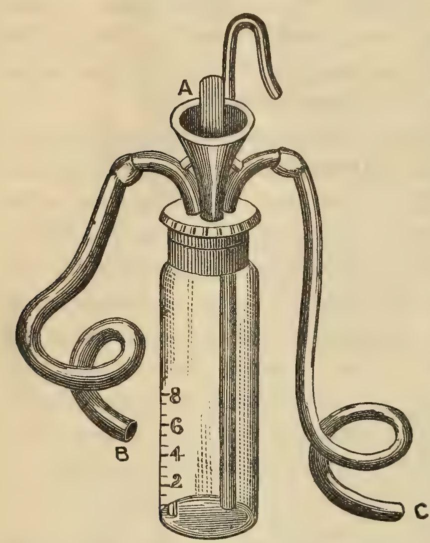
The altered relations between chloroform and ether are, in great measure, due to the fact that whereas but little progress had been made up to late years in the method of giving chloroform, yet very considerable improvements had been effected in the construction of apparatus for the exhibition of ether. Added to this Clover, in England, adopted the plan which has gained such widely spread adoption and which consists in the induction of insensibility by nitrous oxide while subsequently anæsthesia is maintained by ether. In dental practice this combination has answered admirably, and is now commonly in use. It is undoubtedly true that the "safe" method of Clover for administering chloroform, necessitates a huge and unwieldy apparatus, practical objections which prohibit its ever gaining universal suffrage.

In a paper of deep thought and earnest appeal, Mr. Martin Coates of Salisbury advocates what he terms the "safe mode of administering chloroform." His contention is, that death from chloroform only occurs when bulky doses are used—a statement which Snow and Clover always urged with untiring zeal. In Mr. Coates' practice anæsthesia is produced by quantities of chloroform almost incredibly small; fifteen to seventy or eighty drops sufficing to induce and maintain anæsthesia throughout the performance of an operation of ordinary duration. Mr. Coates used a Snow's inhaler or in some cases simply a folded cloth. Subsequently Mr. Coates tested his method in using methylene, with, according to his own account, marked success, for he says "the struggling was less violent (when methylene was used) the after nausea and vomiting were much less troublesome." And again, "the bichloride of methylene was as effiicient in the same small doses as an anæsthetic as chloroform."

In all researches which have been undertaken, up to the present time, we find that observers one and all affirm the danger in the use of chloroform and its congeners vary inversely with the percentage chloroform vapour present in the air inhaler. But as to the best means of arriving at the desired admixture of air and chloroform vapour, authorities differ. Sir Joseph Lister, whose wide experience and surgical acumen as well as the fact that his attention has been specially engrossed by the subject of the safe induction of anæsthesia must lend prominence to his views, advocates, and with no uncertain tone, the administration of chloroform by the open method, *i.e.*, sprinkled the chloroform upon lint or a towel and having it held before the mouth and nostrils. This plan cannot be adopted when methylene is the agent employed as the proceeding is wasteful. To obviate this waste upon the one hand and the cumbrousness of Clover's chloroform apparatus upon the other, Dr. Junker adapted the well-known plan of forcing air through tubes by means of elastic press balls. His apparatus although a great improvement upon other inhalers previously in use, yet possessed certain drawbacks more or less troublesome when used. In the description of it, it is stated that it is unnecessary to have a tightly fitting face piece. This is certainly a mistake as its frequent employment soon convinces one. Its other defects are instanced below in the description which is appended of an inhaler now used by me in which I have contrived to get rid of the inconveniences previously experienced by me in using Dr. Junker's own inhaler. I quote from the *Lancet.*—

“Dr. Junker's inhaler has long been used as a convenient one for the exhibition of methylene, but those who have used it at all largely have found that it has several drawbacks which go far to restrict its use. Practical experience of its use and shortcomings has led me to attempt to remedy these; and the modified form that Messrs. Mayer and Meltzer have constructed for me answers its purpose well, and obviates all the disadvantages of Dr. Junker's apparatus.

FIG. 1.



In prolonged operations it is necessary to refill the methylene receiver, an act accomplished with delay and difficulty in the older apparatus, as the top has to be unscrewed and readjusted. This, unless the narcosis is profound, will allow the patient enough air to partly regain consciousness — a result harmful to the patient and the operator. In the old method both hands were engaged, so that the pulse could be but imperfectly studied, while the conjunctival reflex could be tested with difficulty. Further, the administrator often found himself greatly inconvenienced in other ways for lack of a free hand. In the modified form refilling can easily be performed by the administrator himself. The celluloid stopper is removed from the feed-hole (A, fig. 1), the methylene introduced, and the celluloid peg simply fixed by a turn of the fingers. The second difficulty, that of using the hand-injecting bag, is obviated by employing the flat-faced pedal. The straps fix this firmly to the foot, allowing the administrator to step from one side of the table to the other, if needful. The tube C (fig. 2), of course, as in Dr. Junker's, supplies air which is forced through the receiver bottle, while fig. 3 shows the two ends of the tube which conveys the air-diluted vapour to the face-piece. The coils of tubing have been omitted to save space in the drawing. It is important that the inlet tube should be upon the upper surface of the pedal, otherwise it becomes choked with dirt. In my inhaler I have replaced the rigid face-piece, which I have found cuts and incommodes the patient, by one made of leather and having an air cushion adjustment around its face surface, which enables one to fit it very accurately to the inequalities of the countenance. This is supplied with an expiration valve allowing for free disposal of respired air. I find that it is quite easy to have a series of face-pieces of varying size, which may be so arranged as to either get into gear with Clover's ether inhaler or my methylene inhaler, and thus dispenses with the necessity of having a double set of face-pieces. Further, the face-piece can be removed entirely and replaced by a V-shaped tube which screws on. To the limbs of the V are attached soft catheters, which answer admirably for giving the anæsthetic in operations about the mouth, in which, of course, a face-

FIG. 2.

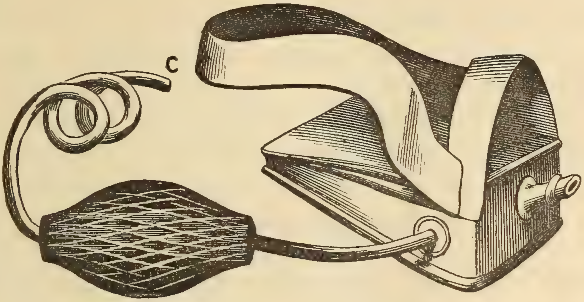
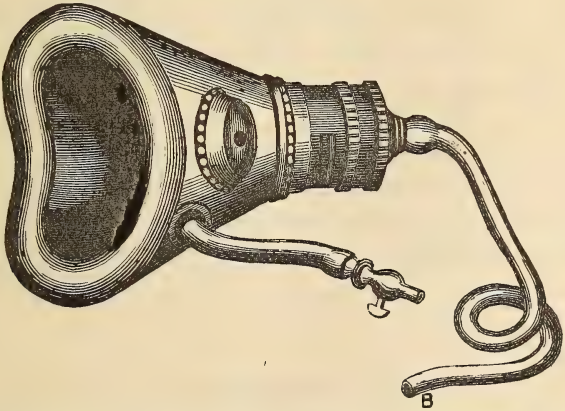


FIG. 3.



piece cannot be employed. The catheters pass right to the back of the nares, and so throw the vapour into the pharyngeal cul-de-sac about the larynx." (I find Mr. Mills of St. Bartholomew's, employs a somewhat similar contrivance.)

In cases in which the use of nitrous oxide and ether is deemed inadvisable, and such occur more frequently than is commonly recognised, dental surgeons will find methylene a useful agent to employ. Although certainly far from being absolutely safe, it is yet probably safer than chloroform and is less liable to provoke sickness and nausea. Patients regain their consciousness more rapidly when narcotised by methylene than when chloroform is used ; so that methylene again is more serviceable to dentists whose time and available space are limited. It must be understood that it is not suggested that methylene should be used at all largely in dental practice, certainly should never be employed when gas and ether can be safely relied upon, but that it is probably a better agent for dentists than chloroform.

Mr. Martin Coates' method, if it succeed as he promises it will, is certainly one which might be employed in dental operations. It seems, although I have not at present tried it, that my modification of Junker's apparatus would easily adapt itself to Mr. Coates' plan. All that would be needful would be to lift the plug and drop in the minute dose recommended. Thus with five minims to start with, three or four complete respirations would be permitted, then ten minims would be thrown in, then eight respirations would be permitted, then fifteen minims would be added. After each sixteen respirations fifteen minims would be subsequently added until the operation is complete. At present I cannot make any statements as to the success of such a mode of procedure, as larger quantities are usually employed by me in the course of ovariotomies or other cases when I am requested to administer methylene.

PRELIMINARY EDUCATION.

By C. L. Goddard, A.M., D.D.S.
(Professor of Mechanical Dentistry in the Dental Department of the University of California.)

(*Concluded from page 937.*)

It is our desire to give our students the best instruction and opportunities for training that are in our power. We recognize the fact that the better prepared the student is, that is, the more he has formed the habit of study, so much the more shall we be able to help him, and so much the more will he be able to take advantage of all the opportunities that can be given him. We shall not need to explain so minutely things that ought to be understood on general principles, and the time spent here can be devoted more fully to professional subjects.

In order to take no possible advantage of students ready to enter now, our examinations at first will be easy.

All graduates of recognized colleges and high schools are admitted without examination.

We require of others only a brief written essay, as a test of orthography and grammar and an examination in the elements of physics and mathematics. This surely is not requiring too much from one who desires to become a professional man. In fact the examination is the perfection of simplicity.

The requirements will doubtless be increased gradually to correspond more with the requirements of other departments of the university, but these changes will be announced in advance so that all who wish may prepare for them.

In Ontario, Canada, students in dentistry are now required to pass a certain grade in High School as a preliminary examination before being taken as students by regular practitioners, or entering a school of Dentistry.

In the Dental Schools of London and Edinburgh, students before entering, are required to pass an examination in the English language, arithmetic, algebra, grammar, Latin and Greek or French or German, almost as severe an examination as for entering a classical course in college.

Some say to us that our preliminary examinations will keep out some good men who would be a credit to us. But that, I feel sure, is a mistake. It is not our design to keep out any, but only to encourage them to prepare themselves by preliminary study so that they may obtain the greatest possible amount of good from what we may have to offer.

There is another thing besides the mind that should be trained and that is the body—the whole body, but especially the hands and fingers.

Every boy and girl should learn the use of tools. They should become dextrous at all undertakings ; not only dextrous, but ambidextrous. There is no reason for making one hand do all the work, when by early training both may become equally useful, and each relieve the other.

Students of Dentistry especially need training of the muscles. In actual practice the principles and theories held in the mind must be worked out by the fingers. There is needed acuteness of the eye, and firmness and delicacy of touch.

The practitioner must know not only what to do, but how to do it quickly and skilfully.

If you will look for a moment at the programme that was handed you, you will see that four of the professorships of the Dental Department are the same as four of the Medical and that three are devoted to practical dental subjects. Read these seven subjects carefully, and see if you think justice can be done them by one who has not been accustomed to study. The study of dental surgery does not consist merely in learning practical things but in learning the structure and functions of the human body in health and disease, and how to make and apply remedial agents. This is necessary in order that when we find the parts which we are called upon especially to treat are not in a condition of health, we may restore them before proceeding with our special work.

The practice of Dentistry is encroaching more and more on that of the general practitioner.

To sum up, I say that it is only by thorough preliminary education as well as thorough professional training, that the student will be able to reach the highest standard.

We hope that none of our students will be so narrow-minded as to wish to be dentists only. We hope that all of our graduates will not only be professional men, but educated gentlemen in the broadest sense of the term.

In daily intercourse with our patients, many of whom will be of the highest culture and refinement, we should be able to meet them as their equals. Thus and thus only, shall we be able to gain their entire respect and confidence.

To the *Graduating Class*, I will say that although you have passed through the prescribed course of study, have passed a satisfactory examination and are about to receive the highest degree that is granted to members of our profession, you must not think, for one single moment, that your days of study are over.

To me it seems that a college course is but a beginning and not an end. In fact to-night is only the *commencement* of your professional life. It is impossible for you, in the short time that you have been with us, to master thoroughly all the details of the subjects which you have studied. A college course seems to me to make only an index of the mind that shows you how or where you may study each subject more extensively and thoroughly. Hints that you may have received will incite your minds to ask the questions, Why and How ? and that is the beginning of all education.

Do not be content merely to ask these questions and wait for answers. Seek out the answers yourselves. Investigate as thoroughly as you can every subject connected with your profession. It cannot all be taught to you. You must learn it by personal exertion. If you have discovered that we have been remiss in our instruction or that we have failed in some of our endeavours, do not wait to bemoan the fact, but seek by individual exertion to make up what has been wanting and give us the result of your investions.

Your future is in your own hands, and you may make it what you will. Remember that there is room for you all—but where ? The second and third ranks of our profession are full and crowded there is room only in the first rank.

Now at last for your courtesy, friendly interest and attention let us thank you. We cease the relations of instructors and students, let us assume the new relations of cordial and well-wishing friends.

THE TREATMENT OF DEAD TEETH.*

By Walter J. England.

Mr. President and Gentlemen.—In bringing this subject before you to-night, I am sorry to say that I am not in a position to place before your notice anything new ; but my object is to give a brief resumé of the various points of interest connected with Necrosed Teeth, with the hope that it will promote a discussion which may assist some of us to form an opinion as to which is the best method of treatment ; or to instigate us to experimental treating and observations which may elucidate the matter to our satisfaction.

This operation, which is now so common, I find on looking back, has a very brief history, for in one of the earlier editions of "Tomes' Dental Surgery," published 1859 ; after reading a very accurate diagnosis of all the conditions of necrosed teeth, I find the following paragraph, "In respect to the treatment of either partial or complete necrosis of a tooth, but little can be said further than that as soon as the diseased organ becomes a source of serious annoyance and should be removed ;" and certainly when in the course of a year or two later on a method of treatment was proposed, it met with considerable opposition, on the ground that being dead, it must act as a local irritant, and as such exert a morbid influence on the parts immediately surrounding, and through them on the whole animal economy, hence its removal was considered desirable, but as soon as it was understood that though "the tissue contained on the pulp chamber and canal of the fang and the dentine surrounding them had lost vitality," that still the cementum and in many cases, I believe, part of the dentine next to it was still nourished by the plasmic matter contained in the lacunæ and canaliculi of the cementum and the tubules of the dentine that the tooth in no way acted as a foreign body ; it was apparent that the term "Necrosed Teeth," was not applicable, and the term "Partially Necrosed" was substituted instead, in these cases, and under these circumstances efforts have been made to preserve them and with considerable success.

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* A Paper read before the Students' Society of the Dental Hospital.

But in other conditions of partial necrosis, such as for instance, where the cementum becomes affected, while the pulp still retains its vitality, as sometimes occurs, and in cases of complete necrosis all hope of saving the tooth is useless, and the advice contained in the paragraph I have just quoted from Tomes is eminently applicable.

Drs. Maynard and Baker were among the first to show that the morbid phenomena connected with a dead tooth, were due to the irritation produced by the decomposing matter contained in the pulp chamber and canal, and declared that to prevent it it was necessary to fill the cavity and canal, so as to exclude everything else, and the accumulation of purulent matter being prevented there, its secretion at the extremity of the root will either cease altogether or be absorbed as fast as it was formed.

Thus, having been tried, with on the whole, satisfactory results, the idea must have struck some one who was not altogether satisfied with his success in capping teeth (for to digress a moment, it appears that the operation of capping pulps was practised about 12 years previous to the first really successful attempt to save partially necrosed teeth) when he had a large exposure to treat and did not wish to sacrifice the tooth, "Why not kill the nerve at once and save myself the work of the patient having to come back in the course of a few months with the tooth dead or dying and a history of discomfort and pain," and the result of this thought is that we have now two methods of accomplishing this operation. The first is either be extirpation with an instrument or the actual cautery ; the second is by means of a devitalizing agent such as arsenic.

The extirpation method has had many advocates on the ground that it does not irritate the parts beyond the dental cavity. Its mode of accomplishment is well known to you and how painful it is ; and in my opinion only justifiable in certain cases and then if posssble I should endeavour to accomplish it while the patient was under the influence of gas ; but I find Harris in his work on Dental Surgery, &c., quoting a Dr. J. H. Foster, who says, "I do not remember a single case of the removal of the dental pulp by an instrument, the gold being inserted immediately after the hœmmorrhage has been checked, which has resulted in an alveolar abcess."

Devitalising by means of the actual cautery, I shall not consider, as it is never or very seldom practised, being a very cruel method, and is generally followed by a large amount of irritation in the surrounding tissues. The mode which seems to be the most favourably received is destroying the nerve by means of arsenic, used in the form of arsenious acid, as a powder or in the form of paste mixed with sulphate or acetate of morphia. The object of adding the morphia being to use its sedative properties, to assist in mitigating the occasionally severe pain, which sometimes arises and continues for an hour or two after the arsenical application.

As a general rule, I believe I get the best results when I use the powder, which I always endeavour to do if possible ; but sometimes a more favourable application can be made by using paste, but if I have a choice I prefer the powder, and try to lessen the chances of more pain by taking care to have a free exposure, and seeing there is actual contact between the powder and pulp, place over it a metal cap, and see that the filling is free of the bite.

In applying the arsenic, care should be taken that the amount used does not exceed $\frac{1}{16}$ of a grain of the pure material, that none is pressed out of the cavity, and never pass it up a canal the walls of which you may have reason to think are very thin, and have been pierced; or else severe inflammation will arise, and probably the edges of the alveolus become necrosed, and though by arresting the inflammation and treating the exposed parts of the alveolus with a mixture of chloroform and creosote, this condition of things may occasionally be arrested if not very severe, I think in eight cases out of ten they will result in the tooth having to be removed in the long run.

With regard to the period of time, the arsenious dressing should remain in, the patient should be seen in the course of a day or two, and the dressing removed ; but as far as my experience goes, I have seen them remain in for months (owing to the patient not returning at the time appointed) and have heard of them remaining for years and the teeth have been perfectly comfortable, and for this reason I think it is always advisable to fill the cavity with G. P. in preference to wool and wax, or wool dipped in mastic.

Occasionally after removing the dressing we find the nerve at the extreme tip of the fang alive, when this is the case, the arsenical dressing can be repeated, or the nerve destroyed by touching it with strong nitric acid passed up the fang on a fine splinter of wood.

But it has been mentioned to me that these small pieces of nerve can be left alive and the tooth filled with good results. Personally I have had no experience in the matter, and shall be glad to hear if any one present has.

After having decided to endeavour to preserve a tooth (a point in some cases no easy matter to decide), one of the first points that presents itself to your mind is whether anything can be done to remove the peculiar colour of dead teeth so well known to you ; the intensity of which is dependent on the amount of colouring matter which has infiltrated into the dental tissues and which arises from the decomposition of the blood corpuscles consequent upon the death of the pulp ; from this it follows that in young persons, whose teeth have large pulps, when they die the stain is darker ; whereas in old persons teeth which have small pulps and small blood supply , the stain is feeble and sometimes not apparent ; from this it follows that although if this tint is present you are pretty safe in concluding the tooth is dead, you cannot rely upon it altogether. Various methods have been suggested to restore the colour of the tooth before permanently filling ; all depending on the bleaching properties of chlorine. You clear out the cavity, plug apex of fang with wool, introduce a bleaching agent, such as oxalic acid, chloride of soda or lime, and seal up the cavity for about half-an-hour, remove dressing and well wash out. But as it is sometimes necessary to repeat this process two or three times before an appreciable effect is obtained, and experience shows that then it does not seem to be permanent, the process seems to have fallen into disuse and is at present as far as I have the means of judging, hardly practised at all. So now we endeavour to lighten the shade of the tooth by removing the decay and as much discoloured dentine as is possible and turn our attention to the fangs.

And here we approach a subject which opens up a wide field for discussion as to the best methods of treating them, "Whether they should be cleared out or not?" Granted that in the majority of cases it is desirable to do so; "Should you be satisfied with clearing them of all *débris* and not enlarging the canal; or is it necessary to open it right up to the foramen by drilling!" and having cleared out the fangs, "What are the best means of dressing and permanently filling them and under what conditions of the tooth is it possible to do so?"

MINUTE ANATOMY OF THE HUMAN TOOTH.*

By Frank Abbott, M.D., New York.

Mr. President and Gentlemen, I suppose you will all recognize the fact that in order to treat the teeth or any other portion of the human frame rationally, you should first understand the absolute structure of the part itself. In fact it is thought by many that no one has any right to operate upon teeth, or treat any other part of the body, unless he understand the structure of the part upon which he is operating. I need not tell you that it is necessary to understand the structure of the teeth perfectly in order to be able to treat them in a manner to save them. I need not say to you that it is necessary to *save teeth* in order that patients may have good health. You know it is impossible for a person's digestion to be in perfect order unless the primary digestive apparatus is in a good healthy working condition. If the teeth are out of order the whole digestive track must necessarily be more or less affected. It cannot be otherwise. That being the case it stands us in hand to be careful in the study of this organ, that we may know just how, where and when to work. We see in a diagram of an upper central incisor tooth, cut nearly through the centre, magnified a little over 10,00 diameters, the following features. First we have the crown, that portion which projects out of the gum; the neck, to which the gum is attached, and the root of the tooth, which stands in the socket formed by the alveolar process. The main portion of the tooth is composed, as you all know, of the dentine, or what was formerly called the ivory of the tooth. The crown is covered by the enamel, which is very much harder than the dentine, and is put there for the purpose of withstanding the attrition of biting and mastication. This is covered, as you will observe, by a little epithelial layer. This membrane was discovered by Alexander Nasmyth, in 1839, and is known as "Nasmyth's membrane." The root of the tooth is covered by a portion that is called the cementum, or *crusta-petrosa.* This more particularly resembles bone and contains more organic substance than dentine for its more perfect attachment to the periosteum, which covers the outside, or rather lines the socket in the alveolus, and is reflected upon the root of the tooth. The tooth was, up to 1678, I think, supposed to be a crystalline mass without any structure whatever. It was supposed to be a separate organ from the rest of the body, and simply stood in the socket without any attachment except a mechanical one. The same, for instance, that holds a nail when it is driven into a piece of wood, and expressed by the word gomphosis—a word still used by some anatomists in this connection.

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*A lecture delivered before the Dental Society of the State of New York.

In 1678, a German, I think he was, by the name of Leuwenhoek discovered what he called "straight and transparent pipes" in the dentine in the teeth. He was the first who promulgated this doctrine. This man's name, therefore, we all should respect as that of the man who made the first recorded discovery of importance in the structure of these important organs. From that time up to 1839, this was the theory and understanding of the structure of the human tooth. The enamel was still supposed to be a crystalline mass upon the surface of the crown without any organic structure whatever. The "straight and transparent pipes" of the dentine were supposed to be filled with a jelly-like substance. That is all that was known of the anatomy of teeth until the year 1839, when Alexander Nasmyth, an Englishman, published the results of his researches in this direction. In his published work he gives drawings and describes a reticular structure of both the dentine and enamel; also what he calls a baccated appearance of the "pipes" of Leuwenhoek, called by him, I believe, "tubules" or tubes. Mr. Nasmyth was as much at a loss, however, as to the nature of the contents of these tubuli as Leuwenhoek, or any previous observer had been. In 1844, Dr. P. B. Goddard, of Philadelphia, wrote a work upon the "Anatomy, Physiology and Pathology of the

Human Teeth," in which work he quotes nearly everybody who had written upon the subject before him. He states that the reticular structure and the contents of the tubuli are a gelatinous mass, which is moistened by fluid which comes out of the pulp and works its way off into the dentine. He says nothing about the enamel particularly. What may seem a little singular to us is the fact that every observer up to within the last five years, ignored, comparatively speaking, everything that Nasmyth did, no credit having been given him by any observer, as far as I have seen. Had his discoveries impressed the dental student of his time as they do the searcher after the truth of our "day and generation," we would have known the structure of the teeth to-day very much better than we do. In 1878, a gentleman in New York, Dr. Bödecker undertook the study of the minute anatomy of the human tooth. He has written quite voluminously upon the subject, which may be found in the *Dental Cosmos* in several articles in that and the following year. He gives us drawings as well, from two hundred and fifty to two thousand diametres, one-fifth the size of the diagram which I have the pleasure of showing you here. He shows the reticular structure, which, in his opinions, is traversed in every direction by *living matter*, in which opinion I heartily concur. This living matter is believed to traverse not only the canaliculi proper, but the net-work which joins the canaliculi together. This frame or net-work is composed of minute tubes formed by the glue-giving basis substance. In these tubes is a fluid, in the centre of which runs the living matter ; tho fluid serving both as a protector and an insulator. Against the outside of the sheath or tube the lime-salts are deposited, forming the substance of the tooth. The red lines you see running through the dentine, enamel and cement, represent the living matter. The finer white lines which are seen running between the canaliculi and joining them together, known as the reticulum, are believed to contain very minute fibres of the same living matter. As I before stated the reticular structure of the dentine and enamel were discovered by Alexander Nasmyth, in 1839, but it remained for Dr. C. F. W. Bödecker to make the discovery that the reticulum contained living matter, and that the tooth was as perfectly organised as any other organ of the body. This discovery has rationally explained the peculiar and most acute pain produced by cutting a living tooth. Formerly it was thought that the pain was produced by a vibration of the fluid substance contained in the canaliculi by cutting with a fine instrument, the vibration being conducted along the canaliculi from the point of contact with the instrument to the pulp. As the canaliculi approach within a short distance of the enamel you will observe that they branch off or divide into two, and sometimes three, smaller canaliculi, in order to accommodate themselves to the finer structure of that substance. At this point, between the enamel and dentine, and all the way down between the cementum and dentine, we have what is called by Bödecker the "interzonal space," instead of the inter-globular space, as it was formerly called. The living matter forms a very minute net-work at this space, in many instances so fine that it is impossible distinctly to see it. From this space it runs off into the enamel, to which it is distributed. Passing on through the enamel we see it entering and being distributed to Nasmyth's membrane. You will see in following around this interzonal space, little protoplasmic bodies, extending from it into the enamel some distance. These bodies are apparantly irrregular in form. They are granular in appearance, the granules being joined together by fibres. These are very small structures of themselves, it is true, but they all represent life. They are the living portion of the tooth.

Going back a few years we find in *Dental Surgery*, published by Tomes in 1873, I think it was, a description of what has since been know as "Tomes' fibres," which consist of short fibres drawn out of the canaliculi of the dentine. The process by which the discovery was made, and the fact established that very delicate fibres existed in the canaliculi, was somewhat as follows : A freshly extracted tooth was taken, its pulp chamber opened to its fullest extent, so that a good hold could be obtained of the pulp. It was then grasped with a pair of small forceps and gradually drawn out of the canals. Upon examination of the surface of the pulp thus pulled out, small fibres were seen extending out from the surface in great numbers, too small, of course, to be seen with the naked eye. I believe the power used was about five hundred. Tomes was, and I believe still is, of the opinion that these fibres were branches of the nerve in the pulp. The cementum of the tooth, as you will observe, covers the root and laps on to the edge of the enamel, the enamel passing down on either side underneath the edge of the cementum joined to it. That is the point known as the neck of the tooth where the gum is, or should be, attached. It is about a sixteenth of an inch long normally, in the mouth. The cement, as I said before, is a substance resembling ordinary compact bone ; we find bone corpuscles distributed through its structure, with the numerous off-shoots usually present. Chemically it is almost the same as ordinary compact bone. Not like the alveolar process, which is known as cancellous bone, which we have a sample of in the diagram upon the outside of the root. Following this along we come down to the end of the root of the tooth, the point where the pulp enters. This pulp, as you will observe, consists of blood-vessels and nerves principally where it enters the root. The nearer we approach to the crown, however, the larger it grows, the excess being made up of myxomatous connective tissue. The bright red lines shown here represent the arteries, the darker red lines the veins, and the white the nerves. You will notice that the nerves beyond a certain point become red, or what is known as non-modullated nerve fibres. It is in this condition that they pass on through and between the odontoblasts (which are seen surrounding the entire pulp) into the dentine. Odontoblasts (tooth-formers) are a row of beautifully organised bodies located on the outside of the pulp, next to the dentine. They have a reticular structure, in the meshes of which water is held, until it is displaced by lime-salts. While one row of odontoblasts is being converted into dentine by the deposition of lime-salts, another row is being organized and will take their place in regular order. Thus it is that the pulp is constantly becoming smaller and the dentine thicker. You will observe that the odontoblasts have a perceptible nucleus. It is at that point that the lime-salts are first deposited, and it undoubtedly remains the nucleus after the odontoblast becomes a dentine cell. And I have no doubt but that the delicate reticulum of the odontoblast still exists in the dentine cell, but so very delicate that the highest powers of the microscope fail to bring them to view. I want you to remember that the first row of odontoblasts formed is immediately under the enamel, and as each row becomes dentine, another row is formed back, or inside of it, so that the growth of dentine is from without inward, while the growth of the enamel is from within outward. The crown of the tooth with its enamel is all formed before any work is done upon the root. The point where the finishing touches are put on is the extreme end of the root, as far as outward appearances are concerned.

The President has asked whether in cutting a tooth the small protoplasmic bodies seen upon the diagram, projecting from or forming a part of the interzontal space in the substance of the enamel, are to be seen with the naked eye. No, they are altogether too fine for that, but they are readily seen with a power of 500. When the President asked the question I was about to remark that nature is always at work, so that work is constantly going on in a healthy tooth in a quiet and imperceptible way. But under the slightest irritation, either from friction, caries, or any other source, the odontoblasts become stimulated and the process of dentine forming is renewed with vigour. This is the proper fulfilment of the old adage that "self-protection is the first law of nature." It is under such conditions that we have what is known as secondary dentine deposited. According to Bödecker the living matter that runs into the canaliculi is made up from the sheaths or outer portions of the odontoblasts, and apparently passes between them, instead of out of their ends, as described by Tomes. Outside of the tooth, as you see it stands in the socket, you will observe the periosteum, which is this portion coloured purple in the diagram. This membrane is very vascular and exceedingly sensitive. I wish to call attention to the arrangement of its fibres. From their attachment to the root of the tooth, they run in an oblique direction toward the crown of the tooth, to the point of attachment to the side of the socket. By this wise arrangement you will see that the tooth is always suspended in a sort of sling, so that in biting the fibres stretch and as soon as the pressure is relieved they contract again, giving the tooth more or less of an up and down motion in the socket. But for this wise provision of nature, if our teeth were solidly held in the jaws, we would probably become toothless much younger than we now do, as we would break them to pieces in biting any hard substance.

Mr. President and gentlemen, I have gone over this subject in a very hurried manner, and may have failed to speak of many things in connection with the anatomy of the tooth that may occur to some of you. I will, therefore, be very happy to answer any questions any of the gentlemen may wish to ask.

THE ETIOLOGY OF DENTAL DECAY.

By Geo. Watt, M.D., Zenia, Ohio.

(*Continued from page 994*).

Dr. S. seems to think that the chemical theory is annihilated because alkaline mouth-washes, etc., fail to serve a good purpose, "Acid agents would serve a better purpose," he says. Well, what of it? Can you not bear me witness that in the journals and before this society and elsewhere, though an earnest advocate of the chemical theory, I have perseveringly and persistently urged the use of acids as preventives of decay?

Do not Drs. Rehwinkel, Jennings and others recall my eulogy of saur-kraut for this purpose? Dr. S., further down, tells us that an alkaline condition of the saliva is as productive of *a certain class* of germ development as an acid condition is of *other* classes." But he seems to care nothing at all whatever for the cause of the alkalinity ; but as that condition of the buccal fluids is often, if not generally, caused by ammonia, you will bear in mind that this is a frightful precursor of the most destructive form of dental caries. And in this connection he urges the importance of correct diagnosis, yet gives it so little attention himself that he seems not to care as to the cause of the alkalinity, nor as to the variety of caries to be considered.

Dr. S. also quotes from Surgeon George M. Sternberg, of the United States army, "as an indorsement of this position of Prof. Mayr," leaving us to infer that the position to be indorsed is the statement that "bacteria may enter healthy enamel," a position which Dr. S. himself intimates is somewhat "visionary." But the main point in the quotation from the Surgeon is that when vital resistance of tissues is reduced the parasitic organisms can overcome them more readily; but that proves nothing for the germ theory, for as vital power is reduced, chemical affinity acts with greater relative power; for who does not know that vitality is one of the modifiers of chemical force?

Dr. S. tells us that he is "quoting Prof. Tyndall in substance," in saying that if any putrefactible substance is excluded from the air, or if it is exposed to air from which all germinal matter is excluded, no putrefaction will occur. "In other words, no germs, no putrefaction ;" but this is flatly contradicted by the experiments of Dr. Uskoff already quoted, as well as by the very careful experiments of the late Prof. Thomas Wood, and the writer, as referred to in this article.

But the fearful length of this paper, and nothing else, prevents a reply to every position of Dr. S. adverse to the chemical theory of decay. The remaining ones are more easily answered than are these noticed. One remark of his will yet claim attention and then his paper must be dismissed. He says : "Our attention in the past, has been directed too exclusively to simply the inorganic portions of the teeth. It has been the decalcification of the teeth, the *non-vital lime-salts, etc.*, that has (have) absorbed our attention to the exclusion of a proper conception of the vastly more important part that *protoplasm* plays in the life and existence of these organs."

Now who has been slighting the organic materials of the teeth? I know of no prominent writer who has advocated the chemical theory of decay who has not stated the action on the organic, as clearly and as fully, as that on the inorganic portions of the tooth, when describing the action of the exciting agent in each of the varieties of caries. In Watt's Chemical Essays, in the articles, "Thoughts on Caries," and "Chemistry of the Mouth," I know this will be fonnd true. (See Appendix to Taft's Operative Dentistry.)

With some thoughts on the nature and circumstances of dental decay, this long paper must close.

Many are puzzled to know why caries are found in definite spots, if the chemical theory is the true one. Let it be borne in mind that the acid immediately causing the decay is always nascent when doing its work. Many reasons explain why it is generated or liberated at particular points. Then the microscope reveals places in both enamel and dentine imperfect organization. These points yield to chemical action much more readily than normal structure; and this is one reason of the definite position of caries. And now suppose the exciting agent has, through a defective spot, got within the enamel, it acts on the dentine, and is not readily washed away by the fluids of the mouth, or even by the brush. Take, for illustration, a case of white decay. The exciting agent is here able to break down all tooth tissue. It acts on the inorganic a little more readily than on the organic. It does not form with tooth material, as highly soluble compounds, as does the agent, or agents, in causing chemical abrasion. The destroyed tissue will, in part, remain within the cavity of decay, but most of it can be wiped away with lint, or washed away by a stream of tepid water. Not nearly so much of the decayed material can be thus removed from a cavity formed by the colourless, or brown variety of caries.

Now, for the present, assume that white decay is immediately caused by nitric acid, and that this acid is formed by the oxidation of ammonia. As ammonia is composed of nitrogen and hydrogen, its oxidation results in nitric acid and water. Liebig and other authorities state that it is always thus oxidized in the presence of free oxygen. And if it was in Liebig's day it is now. Remember, too, that ammonia always results from the putrefaction of nitrogenous organic compounds. Suppose an atom of nitric acid has got through the enamel—not through the hole that Mayr's bacteria goes in at—but through a defective spot. It acts on the dentine—faster on the lime than on the gelatin. A thin layer of the limesalts is dissolved, and of course a thin layer of organic matter is left. By putrefaction it gives ammonia to be oxidized into nitric acid, to dissolve more lime, and expose more organic matter, to putrefy and give more ammonia, to be oxidized into more nitric acid, to dissolve more limesalts—and thus on and on, till the pulp cavity is reached. Such is white decay.

Now, is the presence of germs necessary to explain the burrowing found in this variety of caries, as is claimed by the germ theorists? If Mr. Sewill is right, that leptopthrix are found only on the surface, that cannot burrow, as can nascent nitric acid manufactured on the spot, and getting in its work as fast as it is generated.

We might illustrate the most common, and the black decays in a similar way, but time, space, and strength rebel.

CLINICAL STUDIES ON THE COMPLICATIONS OF DENTITION.

By Dr. Magitot.

(Continued from page 953).

To the phlegmonous form, which we are about to describe and to simple gingivitis, the ulcerous state often succeeds. At this time we notice on a level with the torn shreds of mucous membrane or following the opening of the follicular abscess, grayish, irregular ulcerations produced at the bottom, covered with fragments of epithelium which give them the aspect described under the name of ulcerative-membranous stomatitis. The seat of these ulcerations is the region about the wisdom tooth or the gingival rim which surrounds it; often it is the mucous membrane of the cheek, more rarely still the ulceration is seated on the tongue produced when the wisdom tooth has an internal direction. In every case, this ulcerative variety is that which we have indicated elsewhere in treating of gingivitis properly so-called, as representing for a certain number of authors and for ourselves the true nature of the ulcerative-membranous stomatitis described in soldiers, and generally in all young subjects during the period of the evolution of the wisdom tooth. The mucous membrane complications of the wisdom tooth then comprise as we have seen, three varieties; simple gingivitis; phlegmonous gingivitis and the ulcerative variety.

But this is not all, and in the three varieties, and more especially in the two last, there are generally produced local complications on which it is necessary to pause; the most frequent is an *adenitis* under the maxillary bone. It appears almost invariably that the local inflammatory phenomena assume a notable intensity and persist through a certain period. It is this adenitis, or glandular enlargement particularly constant in the ulcerative-membranous form which has been described in young soldiers as the consequence of the pressure of the military collar, or some other special cause; by us included in the series of complications of the cutting of the wisdom tooth.

This adenitis, considered as the complication of a purely mucous membrane disturbance, should have always for its exclusive seat the inferior maxillary glands of the inferior jaw and the parotid glands of the superior jaw. The cervical glands are only obstructed when morbid phenomena have invaded the bony tissue of the jaws. From the adenitis to the Fluxion properly so-called there is only one step and this new complication is equally frequent. Here too, the fluxion assumes the different forms which we have assigned to it elsewhere, simple œdema, circumscribed phlegmon, diffused phlegmon following the same gravity as the initial lesion.

Let us mention, however, that among the mucous membrane disturbances the adematous fluxion is the most ordinary complication. The phlegmonous form belongs to the grave case of the inflammation of the mucous membrane or to those particular cases in which an inferior wisdom tooth finds itself enclosed in the soft parts of the cheek, where it gives rise to ulcerations, in durations, and granulations in the midst of which the tooth is partially buried.

These diverse pathological lesions are not easily diagnosed in the generality of cases, since a great number of them have been absolutely misunderstood in their true nature and origin. However, if we take note of the age of the subjects which always responds to the period of life when this eruption of the wisdom tooth takes place and make on the other hand a careful examination of the suspected region we shall arrive at an accurate opinion. The essential point is to have the attention alive to the possible intervention of this critical epoch that we call the eruption of the wisdom tooth.

(B.) Bony complications.—The bony complications are produced sometimes as the result of previous mucous membrane disturbances, sometimes appearing at the first onset. In the first case they result from the propagation of the inflammatory phenomena a long time confined to the mucous membrane to the bony tissue. The old ulcerations, the persistent indurations, are always very rare, in the inferior which is essentially the place of election. When they succeed to the mucous membrane complications, they assume at first sight the form of an osteo periostitis of the maxilla in a region where the vestibule of the mouth being almost entirely affaced, the central point of inflammation is found in direct anatomical relation with the softer parts of the cheeks ; the process is then simple and passes by the continuity of the tissue of the swollen gingival mucous membrane to the periosteum of the maxillary bone. If the bony complications are produced at the first onset, they have for the outset an osteitis by the compression of the alveolar tissue and consequently a phlegmon of the cheek. Sometimes this osteitis is complicated ordinarily by a simultaneous inflammation of the dental periosteum and the periostitis of the wisdom tooth becomes then the true centre of inflammatory complications. Dr. Piekiewicz in his thesis quotes several cases of his sort.

But this special pathogenesis with the point of intra-alveolar departure, is more frequent still when the wisdom tooth is attacked by periostitis consecutive to a preliminary caries which we know is very frequent. This last mechanism belongs really to the history of the periostitis and not to the complications of the wisdom tooth properly so-called.

However this may be, the periostitis and osteitis, which occur in connection with the maxilla, form the starting point of the complication referrible to bone, which occur in association with the eruption of the wisdom tooth. Sometimes, the process is slow, in some degree chronic, giving rise to those sub-periostial thickenings of the lower jaw. These are generally observed on the outside of the face and occasion deformity of the cheek. This slow form usually follows one of two courses—it either decreases or produces acute swellings. It produces neither an abscess nor suppuration on the side of the alveolus, the suffering is slight or entirely absent especially in the intervals of acute attacks. Such a process is the index of the degree of the pressure occasioned by eruption of the tooth. The period of swelling corresponds with the acute attacks and those of abatement with the stationary period. It happens in many cases that after a more or less prolonged succession of remissions of this sort, the disturbances entirely disappear, which disappearance corresponds exactly with the final eruption of the wisdom tooth. In other cases, the bone trouble assumes an acute form and its inevitable and rapid termination is then suppuration. A true phlegmon appears in the region of the angle of the jaw. A purulent focus is formed and the pus seeks to force a passage through. In this process, the pus may make its way by one of the following vents.

1° It may take an ascending direction in following the edge of the tooth and open a passage into the mouth on a level with the alveolus. This escape of pus once commenced by this passage is continued indefinitely, and by this means a great quantity of pus flows incessantly into the mouth and finds its way into the digestive passages, finally produces that state which Chassaignac has called mouth cachexia, *cachexie buccale.*

2° It presses upon the passage and flows similarly into the mouth, through an aperture which sometimes is in the vicinity of the original focus, sometimes more or less distant in front. The purulent collection having run its course above disengages itself from the bony periostum and forces its way everywhere to the level of the first molar, and even further in front, as far as the chin. This circumstance is of importance from a diagnostic point of view.

3° It sometimes will force a way outwardly, piercing through the skin at points more or less distant, sometimes by a single opening, and sometimes, and this is more usual, through slow and intermittent stages by several orifices which remain as fistulæ. It is in certain intractible cases of this last form, that the cheek is so often pierced with openings by which to make a passage for the persistent suppuration. These phenomena taken together, appear, from our point of view, to be the most often localised. They produce by their persistence and by the recurrence of successive acute periods, disorders which invariably border on a partial necrosis of the bone. But in certain cases, the osteitis and necrosis extend to a part further removed from the maxilla. The situation is then critical ; the phlegmon of the face assumes the diffused form extending to the cervical region and sometimes as far as the sternum and to the shoulder ; the persistent discharge gives rise to gangrene. Often, in spite of the most energetic intervention, death results either by purulent infection or ulceration into the internal carotid or into the dental artery, or by cerebral complications. M.M. Chassaignac, Gauget, Richet, and Piekiewicz have reported cases of this sort.

(*To be continued.*)

A FEW CASES IN PRACTICE.*

By S. Francis Clarke, L.D.S.I.

In submitting the following notes on "Cases in Practice," I am not influenced so much by any special feature they may contain, as by the desire to stimulate the offering of every day experience to the judgment and the records of this Society. As dentists we all know there is much valuable information to be gained by such a course, and that many cases of interest may thus be saved for the profession. This is a work in which all may join, and by all joining we shall place our meetings for casual communications amongst the most practical, instructive and entertaining of our always profitable series.

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*A Paper read before the Midland Odontological Society.

My first case is that of a young lady aged about 20, who called to have an artificial denture fitted to replace two much decayed laterals.

The teeth were extracted, the roots being well developed and having all the appearance of members of the permanent set. In due course the denture was inserted and the patient dismissed.

Three months later she returned, remarking "There is something wrong under the upper lip." Examination displayed the cutting edge of a right lateral just through the gum ; although somewhat prominent and a little high, it was well directed for the vacant space. The artificial tooth on that side of the denture was removed and the patient again discharged in the hope that the tooth would now gradually come into place.

Four weeks ago she came again, although having plenty of space for development, the tooth had not made any downward progress, after this six months interval, the cutting edge was still only visible.

This case seems to suggest the question whether the new tooth is a supernumarary tooth, or the retarded right lateral. I am inclined to the former belief, as the patient is confident that *both* temporary laterals were removed during childhood, and the two decayed teeth resembled each other most closely.

My second note refers to a case of spontaneous and rapid necrosis of the pulp.

Mr. J. V—— aged about 37, called some twelve months ago, suffering from severe facial neuralgia ; he was seen by my confrere, Mr. Joseph Brierley, who removed the roots of the first upper molar right, their acute sensitiveness pointed them out as the exciting centre of pain. On that occasion every tooth was carefully examined, in the endeavour to discover any other cause, but nothing was found to indicate present or future trouble, and the patient left apparently much relieved. About three weeks later he again appeared, complaining of a "Throbbing in the roof of his mouth and that the little front tooth was so sore that he could not bear it touched." Towards the back of the palate was some swelling and other signs of approaching palatine abscess, while the left lateral was unbearably sensitive, slightly loose and of a darker shade than the other teeth. At his earnest request the tooth was extracted to his immediate relief.

Upon splitting, the pulp was found disorganised and offensive.

In this case there was not any trace of mechanical violence either immediate or remote. At the time of the previous examination the tooth did not show any signs of approaching trouble, and after extraction a strong magnifier failed to reveal any trace of flaw or cavity.

These facts seem to invest this case with some slight interest.

My last note refers to the case of Miss M—— aged 18, a parlour maid, who called upon me early last March to have the crowns of the right upper central and lateral removed. Both teeth had a compound fracture running completely across, just below the margin of the gum, and encroaching slightly upon the palatine side on the root. They were only attached to the gums by the slight posterior dip of the fracture.

The crowns were quickly lifted, the pulp being already dead, impressions were taken for the artificial substitute, and the patient dismissed for the day.

Ten days after she came in to have the artificial plate adjusted, when I learned that severe hæmorrhage had set up about 8 p.m. on the evening of her previous visit—*five hours after removing the crowns, and forty eight hours after the accident*—which continued for over twenty-four hours despite the efforts of the family medical man to control it, leaving the young girl in a very weak and prostrate condition.

The history of the fracture as gathered from the patient, is that on the Sunday evening whilst walking through some fields, her face came in voilent contact with a gate-post, breaking the two teeth completely through, and slightly damaging the remaining central. On the Tuesday following she came into town to have the loose crowns removed ; on neither of these occasions was there any tendency to severe or even free bleeding. After the removal of the crowns she walked home, a distance of about six miles, and it was not until late, and without apparent cause, that the severe hæmorrhage commenced. I may add when I first saw the case the parts were not swollen, and the impressions taken on that day were used for the artificial denture.

This being a somewhat unusual case, I thought it might prove of interest to you.

CARBOLIZED IODINE.—C. Scherk recommends as better than iodine alone 10 gr. iodine, 5 gr. carbolic acid, 2 drops of oil of peppermint. The carbolic is rubbed with the iodine and the oil then added. The disagreeable odour of the iodine is completely concealed and is not apparent even when heated.

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DENTAL HYGIENE.

The remedies which are to be sought for in mitigation of the evils indicated in our former articles fall under two categories—personal hygiene, office hygiene. Personal hygiene deals alike with how a dentist may maintain body and mind in a state of health. Not only has he to adopt measures to ensure maintenance of the normal functions of his body, but he has likewise to ward off actual pathological tendencies which his occupation forces upon him. It is not superfluous that we thus insist upon the first division of personal hygiene. It is not so, because although all men possess, as it were, a surplus stock of rude health, upon which they may draw even largely, yet each man has his limit and only to this limit may he draw with impunity. The accumulated statistics which the Registrar General's Reports furnish, indicate that the limit varies widely in different callings. Among those who work many hours a day in ill ventilated rooms, early mortality prevails and since dental surgeons fulfil all the requirements for *insanitary* living, we may without going far wrong, say that dental surgeons may tax their natural reserve vitality less than their more advantageously situated brethren. Due attention to maintaining health when the individual is placed in physiological conditions involves the question of diet, of clothing, of the division of time between work and recreation. In diet two extremes are to be avoided, the Scylla of excess, the Charybdis of deficiency. In a way, the latter evil entails the former. It is too often that the luncheon hour dwindles down to five minutes, or is omitted, and as a result a heavy evening meal makes up for the want of the midday repast. This heavy late dinner is about as deleterious as could be. The jaded system re-acts upon the mucous membrane of the alimentary tract and as a result there occurs as complete a suppression of salivary, gastric and intestinal juices as could possibly ensue in the old trial by ordeal. Why do physicians, rowadays, have more cases of dyspepsia and neuralgia than of any other two complaints in the whole nosological table? Surely because men neglect the simplest rules of alimentary sanitation—as they, on the one hand adopt the principle of division of labour, so on the other they wholly neglect its very first essence when applied to their own bodily powers. The breakfast, which should be the mainstay of the whole day, is to the late diner, who has given his stomach the herculean labour of digesting heavy food when it is fagged and jaded, a farce, a mere pretence. It should then be made an unswerving rule that three meals be taken in the day and that the midday meal or lunch be taken slowly and not "rushed." Upon the subject of dress hygiene it is important to remember that the standing posture imposes a serious strain upon the venous system and only too often occasions retarded venous flow through the lower extremities. To counteract the consequent coldness of the feet and tendency to swollen ankles, thick socks and laced boots are to be commended. Stout soles should be worn and shoes avoided as they are cold and fail to support the ankles. In every case a special suit should be employed in the atelier, so that the transition to a colder atmosphere can be effected with as little risk as possible.

In all cases, when practicable, dwelling some miles from a town will be found desirable, and the walk home will do much to promote circulation of blood and renovation of nerve energy. It seems almost superfluous to urge the necessity of the diurnal walk, yet it is in reality just *the* thing which is neglected ; one can always have a walk, but how seldom does it come off ! We pass to the subject of room hygienics. It is, of course, out of the range of many to accomplish the ideal room, but all can approximate to it. In the waiting rooms, two things are desirable, enough space and a cheery *tout ensemble.* Space should not be hampered by bulky furniture. Several small tables are preferable to the usual family dining table, and chairs should be abundant rather than unwieldly. Fauteuils are unnecessary and are seldom used by patients. It is best to have lightly draped windows and floor. If a fire is necessary, and it is generally advisable to have one when the weather is cold or damp, the windows should always be provided with ventilators so placed as to be out of the reach of those who are waiting and who are apt to sacrifice fresh air to mistaken fears of "taking cold." Light literature should always be present, preferably pictorial in character. The walls should also be made a means of relieving the weary monotony of "waiting for my turn." Hunting, or sketches of life and character, such as form the familiar topics of past and present etchers, are most attractive and eye-catching.

In the operating room space should be ample. A very large operating room is as bad as a very small one, on account of the difficulty there is in properly heating it. Walls should be painted or distempered rather than papered. The floor should be parquet or stained and carefully varnished, and if any carpetting is used it should consist of small rugs for the feet to rest upon. A head light, preferably a northern aspect, although opinions vary, should be carried as a sky light or quite up to the ceiling in cases in which the ceiling cannot be cut away. The ordinary window is seldom if ever large enough. The unbroken panes found in the ten-foot windows of studios are best.

Although it is impossible to lay down a hard and fast rule, yet it may safely be said that the light inlet cannot be two large. In all cases sliding windows and curtains are to be carefully adjusted.

THE DENTAL BENEVOLENT FUND AGAIN.

Mr. Dennant in speaking at the Annual Meeting of the Fund, made use of language which we think should draw tears of shame from a good many eyes. "Is it too much," he says, "to expect that out of the 6,000 or 7,000 names upon the register, at least 2,000 should be found who would contribute 5/- a year, that another 1,000 should give half a guinea, and 500 one guinea each? If this were done, rather more than half of our number would be acting up to the appreciation of a sense of duty, and something over £1,500 per annum would be available for this work of benevolence." There are so very very few who could not spare 5/- a year, and there are so very many who could if they chose spare a guinea a year, that it is almost phenomenal that the British Dental Benevolent Fund should be allowed to be so neglected. All would benefit, surely then it is only fair that all should help in the work. We cannot but give our hearty good wishes to the promoters of the Fund, and sincerely hope we may not urge upon unheeding ears the unquestionable duty it is of all dentists to help the Fund.

Influence of Carious Teeth upon the Sight.—A patient under the care of Dr. Galezowski came to him for relief from severe pains in the eyes accompanied by lacrimation. Her sufferings became aggravated at night. Upon careful examination it was discovered that this patient has several badly-decayed teeth. When these were removed the trouble with the eyes gradually disappeared. This is according to the Professor by no means an isolated case in his practice.

ENGENOL IN DENTISTRY.—Engenol is the active principle of oil of cloves. Among chemists it passes under the name of engenic acid. Dr. Harland recommends its preparation by acting upon engenate of potassium with sulphuric acid. It needs rectification. It is said to possess the composition indicated by the formula $C_{10} H_{12} O_2$. It has the well-known odour of oil of cloves. Mixing well with water or alcohol, it may be kept exposed to the air as it has no tendency to become thick or to deposit a sediment.

SANITAS OIL: HOW IT ACTS.—When oil of turpentine is oxidized, sanitas oil results. It is compared in its action to the peroxide of hydrogen. Both probably act in virtue of the ozone, an allotropic form of oxygen, which possesses intense oxidising power, and which is freed alike from the preparations of turpentine or the peroxide ot hydrogen when they are placed in a damp atmosphere. Its great avidity for deoxidised animal matters renders sanitas oil a powerful parasiticide.

DETECTION OF CRIME BY DENTAL WORK.

ITEMS OF INTEREST" narrates the following incident :—

'If you saw the man who bit that apple, would you be able to recognise him?" said an officer to me once. A robbery had been committed in a house, and the robber had bitten into a hard sour apple he found on the centre-table, and had then thrown it on the floor.

"Yes, I think I could," we replied; "and I believe I can so describe him to you that you can identify him. He has large upper central incisors, the front edge of the left one is turned out a little. The left lateral is gone and the right lateral is twisted nearly half way round. That man I believe was in my office a month since and had a little work done. Let me refer to my chart book.—His name is Mr. ——, and I filled three ——."

"But Doctor," interrupted the officer, "the young man you name is entirely above suspicion. It can't be him."

But it proved to be him, and he was sent to the States prison for the offence.

TO VULCANIZE CAOUTCHOUC.—According to a notice of the *Moniteur des Products Chimiques*, the complicated apparatus for vulcanising can be set in hot vapors through a fluid bath in an air-tight apparatus which boils at 140° C on 150° C, at which temperature the brimstone binds with the caontchouc. The cheapest salt for such a bath is chloride of calcium, or acetic acid, soda, or potash; further, glycerine, oil and parafine, and still cheaper, water at 160° C.

Suggested Treatment of Epulis.—Engenol, it is stated, will if injected into an epulis remove it without resort being had to the cold steel.

The Odontological Society.—This Society holds its first meeting Nov. 3rd. Mr. Newland Pedley reads a paper upon "Fractures of the Jaw."

An Odontological Journal for Russia.—With the new year Russia will possess a journal devoted to the science and art of Dental Surgery and Dental Medicine. This is to be called "The Dental Review," and is to appear in monthly issue. Dr. Maksomoff is to be editor. In Russia much material exists, and it is therefore with pleasure that we hear of the appearance of a review which will, we trust, add materially to the instruction of the profession, both in practical dentistry and also in dental ethics.

The L.D.S.I. has been placed upon a fresh footing by the adoption by the Royal College of Surgeons of Ireland of new regulations concerning its curriculum for the dental licence. The regulations are, however, faulty in one salient particular, there still is retained a discretionary power to confer a qualification by special examination. This is a most unfortunate "saving clause," as it is tantamount to saying, "we will authorise a really creditable examination and impose a really creditable curriculum *when we please!*" The L.D.S.I. who have worked in *bonâ fides* for a qualification are unquestionably aggrieved by being thus treated.

A correspondent has favoured us with the following cutting from our contemporary *The Bazaar*:—

"C. R. Werner.—At the Edinburgh police court on the 2nd inst., a middle-aged man named Charles Rudolph Werner, described as a dental surgeon, residing at 63, Queen Street, Edinburgh, was remitted to a higher court on a charge of fraud. It is alleged that since July last he has been obtaining goods, and giving in payment bills that were never met. Advertisements of these goods appeared in *The Bazaar*, and the prisoner wrote to the advertisers asking them to send on their goods or an invoice, and on receipt he would send a bank draft. His habit was to make the bills payable in London at dates ranging from seven to thirty days, and in several cases to get renewals. The property which accused is alleged to have obtained includes gold watches, articles of jewellery, three large St. Bernard dogs, poultry, dog biscuits, corn, waxcloth, clocks, knives, silver plate, and a host of other articles. Werner has a business card, and describes himself as a dental surgeon, and successor to the late Mr. Merrilees, 63, Queen Street. On being asked about the goods he refused to give any account about the property. He said he had a German diploma as a surgeon-dentist. When asked if he was entitled to add M.D. to his signature he said 'that that only represented the words Mechanical Dentist.'"

How long, how long!! It reminds us of the gentleman who was charged with signing the mystic letters M.S. (Master in Surgery) appended to his name, his defence was at least ingenious if not ingenuous. M.S. he said meant Medical Student. The authorities were hard enough to adopt quite another view.

Caoutchouc as a Material for Dental Plates.—Dr. Klarnam believes the caoutchouc is actually injurious as a material for use in the mouth as he says it causes caries. Dr. Lawe on the other hand believes it is the want of cleanliness on the part of the wearers of the teeth, rather than the fault of the caoutchouc. If the plates are cleaned three of four times a day and a gargle employed, he believes no ill consequences follow the use of caoutchouc.

Manipulative Miscellany.

All inventions or articles wished to be described under this heading are requested to be sent *for inspection* to the publisher not later than the 8th and 23rd of each month; they can be returned in a few days. Where, from the size or otherwise, this is impracticable, a clear and minute description will be sufficient; the sole object being to give practitioners a description of everything new, on its own merits, and without any intention or wish to pit one against another. All makers, vendors, and inventors, are invited, with strict impartiality, to contribute towards this end.

INSTANTANEOUS WATER HEATER.

Mr. Josiah Richie has manufactured a new Instantaneous Water Heater, designed for use in the surgery, its chief novel feature being that it is independent of any continuous supply of water, or any fixing whatever. It is also quite independent of any gas burner, as if required it can be used with a spirit lamp.

It is in the form of a brass column about three inches diameter and twelve inches high, standing on a tripod, giving room to pass a spirit lamp under the column. Within this column is the usual spiral of copper tube, with a tap at the lower end, and connected at the upper end with a water tank for supply, standing on the column. Between the bottom of this tank and the top of the column is an iron disc, an air space, and ventilating arrangement, to prevent the water in the reservoir becoming hot and so diffusing steam or vapour into the room.

The whole apparatus stands about twenty inches high, and is very portable.

DR. MADDOX'S ORAL SPECULUM.

DR. Maddox, of Philadelphia, has invented a novel and ingenious oral speculum. It is comprised in three parts, which may be used alone or in combination.

For distending the angles of the mouth, holding the cheeks away from the molars and compressing Stenno's ducts at one and the same time ; he uses a pair of broad flat hooks, each somewhat resembling two bowls of teaspoons, placed back to back and joined together where they ordinarily meet the handle. These are nickel-plated and beautifully bright reflectors. The blades, or bowls, are of unequal lengths, the long ones for use when the wisdom teeth are required in view and the short for the bicuspids and molars. Through the tip of each spoon is a small slot through which is placed a piece of broad elastic webbing. One of these flat hooks is placed in each angle of the mouth and the elastic passed round the head, most effectually distending the lips.

The third portion of the set is also of bright metal, and so designed as to act as a tongue depressor, or to hold down the lower lip and expose all the front teeth and gums for cleaning. The patient can hold this during such operation.

Abstracts of British & Foreign Journals.

GAZETTE DE HOSPITAUX.

NOTE ON THE ETIOLOGY AND TREATMFNT OF ALVEOLO-DENTAL-OSTEO-PERIOSTITIS.

BY DRS. MALASSEZ AND GALIPPE.

THIS wide-spread affection was described by Fauchard, in 1760, and by Jourdain, in 1778, under the name of conjoint suppuration of the alveoli. Of late years, it has been thoroughly investigated by Dr. Magitot, 1867, who gave it the name we still retain. His account of the course and pathological changes found in alveolo-dental periostitis was very accurate, but very little was known of its causation and etiology and it was usually considered to be incurable.

Our researches would tend to show that due allowance being made for the effect of locality, alveolo-dental-osteo-periostitis is a local infectious and parasitic disease ; this affords a full explanation of the whole morbid process, and also gives us valuable indications for treatment.

Any mechanical cause which tends to separate the gum from the neck of the tooth, the most common being a deposit of salivary tartar, enables micro-organisms to get between the cement and the alveolar wall.

These micro-organisms, either directly or as a result of the inflammation they induce, bring about the destruction of the alveolo-dental ligaments and of the cement to which these ligaments are attached.

This form of inflammation is accompanied with destructive phenomena and with signs of new formation, the dentine becomes eroded, exposed and covered in places with newly formed cement; the microscopic organisms penetrate into the canaliculi and after a time all the tissues of the tooth may be affected in a similar way.

The pulp is attacked and disappears. In the last stage of the illness, the micro-organisms freely enter through the canal in the fang, the contents of which have become destroyed. Together with these phenomena there is an abundant formation of pus in which numbers of micro-organisms are found; these we shall have occasion to refer to again.

The treatment should be both surgical and antiseptic, and and should consist in the free destruction of the edge of the mucous membrane of the gums wherever the alveolar border is absorbed so as to destroy the furrows in which the micro-organisms live and develope and in the introduction into these furrows of antiseptics such as a 3 to 4 per 1000 solution of corrosive sublimate.

When the ligamentous fibres of the periosteum are not entirely destroyed, and when the tooth can be kept firm enough to fulfil its functions the affection may be cured; the reverse is the case when the whole of the cement is destroyed, and when the tooth is thoroughly infected by the above-described process.

REVUE DE THERAPEUTIQUE.

FRACTURES OF THE JAWS.

By Dr. Fillion.

The following are the conclusions of Dr. Fillion's thesis on the above subject (Thése de Montpellier, 1883).

Transverse fractures, the most important of all fractures of the upper jaw, may either be double or single and are found on a level with the alveolar arch. They are often but not necessary accompanied by fracture of the pterygoid processes; pain and mobility in this part of the bone are not therefore two absolutely pathognomonic signs.

These fractures are caused by pressure in a horizontal direction; in most cases, in the middle line just below the nose or on the lateral aspect of the maxilla.

The external wall of the antrum is often depressed; this occurs by centre coup as the result of the fracture of the malar bone.

When an indirect fracture is caused by a blow below the chin the lower jaw usually gives way, sometimes, however, it does not.

Direct or indirect fractures are recognised as a rule by the usual physical signs; if these are absent, we know of no rational sign which may make the diagnosis absolutely certain.

ZAHNTECHNISCHE REFORM.

Working in Gold, by Herr Bollensdorff.

Gold work as used in dentistry, was spoken of in an interesting lecture at Berlin some short time since. Herr Bollensdorf gave a description of his method of preparing clasps with small palate plates and suction plates. He said that in preparing a gold plate with clasps the first object is to ascertain how it will look when in the mouth. In many cases roots of teeth still remain in the mouth of the patient and sometimes even the fourth part of former teeth still exist. These remaining teeth are cut down until they are exactly even with the edge of the gums, not lower as when the latter is done, the pressure of the artificial tooth irritates the gum and causes inflammation, After such nerves as still remain have been removed, the roots are carefully smoothed with a file, and those roots which are still in a state of preservation are cleansed and stopped with Eisfelder's cement. Alabaster plaster or heated stentsmass are used in taking the impression, the stentsmass will answer every purpose provided it is quite fresh. When the impression is taken it is filled with plaster which is allowed to run slowly from the arch of the palate into the hollows of the teeth until it reaches about an inch over the arch of the palate so that a conical formed plastered model is obtained. After the plaster model is taken out of the impression it is cut as usual and plaster placed in any visible hollow, but care must be taken that no plaster should cover the places where the gold plate must come. The model is cut as small as the contour will allow. The existing teeth are filed down to a little rim so that it can plainly be seen where each tooth has been on the model. This filing is most important for obtaining an exact stamping of the gold plate. If a model with a high palate is required, the base of the model is cut off obliquely from the front to prevent the slipping of the plate in stamping. Furstenwalder moulding sand sifted through a fine wire sieve, is used for such models. A certain quantity of water is added to give the sand the right consistency for binding. If the sand be too wet the casting will never succeed, if too dry it will fall together in casting.

Herr Bollensdorf uses a moulding box such as artificers use only that it is made of wood, the model is placed in the under half half of the moulding box strewn with lycopodium but not too copiously, the moulding sands rubbed between both hands over the model till it is covered with the sand. This sand is made firm and more sand added, this is made firmer still and the next sand is rendered quite fast by beating with a hammer. After the frame is filled with sand the superfluous sand is rubbed off and the surface made smooth so that it is even with the edge of the box. For the basis of the model the frame is turned and the same process is repeated. Owing to the lycopodium the upper half does not adhere to the part first filled and can be raised off. When the two halves of the box are separated, a hole the size of a finger is bored in the sand in the upper half exactly in the middle of the back view of the model. In order to remove the model the box is taken in the left hand and tapped carefully with a light hammer till the model falls out. If the moulding is successful the half of the box with the hole can be joined to the other half and the casting can begin. The metals used are zinc and English tin. When the model is prepared for stamping the melting spoon is put with zinc into a glowing coke fire, two or three pieces of charcoal are put on and care must be taken that the zinc receives the same amount of heat from all sides. Directly the zinc is melted the melting spoon is taken from the fire, the upper layer removed and the zinc poured slowly into the mould.

BRIDGEWORK, BY F. HÖNER, BERLIN.

Dr. Dexter's method of Bridgework has not the disadvantages of previous methods, which would not allow of its removal from the mouth, and caused a perfect cleansing of the mouth to be very difficult. It may be in the under jaw on each side of the canine tooth the first bicuspid and the first molar, the teeth 3-4 and 8 have become so shortened from mastication, that the under incisors press on to the gums. Dr. Dexter builds up the natural teeth with gold in order to bring the biting higher, but often the pressure of a plate cannot be borne, and then the over capping work is useful and has to do not only with lost teeth but also with the biting. For the construction of such a set Dr. Dexter uses a stamped capping made from platina gold layer which forms a support out of the natural teeth. If the teeth are parallel this cap can embrace the whole crowns. If they are not parallel or stand so that the apparatus cannot be set in the mouth he puts the capping on the side concerned. In order to make the biting higher the capping is set on the crown, and wax put to the right height and form, then taken from the mouth and put in plaster, then the wax taken away and gold soldered. The capping is then set again on the teeth, the impression taken, the model poured, filling tooth chasm and set in the wax. If the teeth have been irregularly set and it is difficult to fit the arch, two or three strong plates can be separately stamped and soldered together. The arch is next soldered on to the supporting plates of the teeth. While the piece is in the mouth a plaster impression is taken. In the impression is poured a mixture of plaster with sand, brimstone, or asbestos, then the plaster impression is taken away. When it is not necessary to heighten the biting, the piece is constructed in the same manner and cut where it is necessary. With strong roots the work is most favourable. Of course this method has been spoken against. Thomas Fletcher says it was used in England years ago, but given up because the teeth under the capping became black. A New York dentist has drawn attention to capping of a different kind as used in the following case: The mouth of a lady had this peculiarity, when shut the upper incisors were three-eighths of an inch apart from the lower ones. When the mouth was shut, nose and chin almost met, and it was such a disfigurement that she did not like to be seen in public. Twenty years before a dentist had made her a plate for the under jaw which overcapped the under grinders, and formed a support for the upper teeth. Dr. Woodward shortened the incisors of the upper jaw about $\frac{1}{3}$, and constructed a caoutchouc plate with continuous gum out of porcelain, which last covered the teeth and went as high up the gums as the impression allowed. The piece was firmly set and worn with great comfort, and her articulation and appearance were restored to their normal condition.

Lecture upon Narcosis, by Dr. Nussbaum.

Dr. Nussbaum gave an interesting lecture in January, on Narcosis, at the Kaufmannischen Verein at Munich. He said that narcotic insensibility came on first in the back of the patient, secondly in the belly, and thirdly in the extremities. Last of all the face becomes stiff and immovable. It is this fact that renders extraction of teeth under chloroform so dangerous, and he says that too little care is taken as to the diet of the patient before such unimportant operations, whereas in greater operations fear takes away the appetite of the patient. Death is sometimes caused by nervousness on the part of the patient, as in the following case. A lady came to have her tooth drawn by a young Berlin dentist who had not taken his diploma and who had never used chloroform. She wished to take chloroform. In his confusion and his unwillingness to lose a good patient, he determined to use a little deception. He held a vessel under her nose from which she was supposed to inhale chloroform. "How do you feel now?" he asked. "I feel very bad," groaned the patient, and before the tooth was drawn she was dead. It was naturally said that this was the effect of chloroform. The case was examined into, and it was proved that the dentist had never bought chloroform, and had only resorted to a trick that he might not lose his patient. The Parisian doctor, Duprin, has mentioned nine similar cases in which people died simply through fear without narcosis.

CORRESPONDENZBLATT FUR ZAHNARZHE.

Some Cases in Practice, by Anton Witzjel.

A young girl suffering from toothache went to consult Herr Witzjel, and while waiting to see him, suddenly fainted. As soon as she was restored to consciousness he examined her mouth, and found the cause of the severe pain to be a very carious lower second molar. When touched, the tooth occasioned the patient intense pain and appeared to be highly hyperæsthetic. The patient said she had suffered greatly for some time from sleeplessness and the previous night had not slept at all, which explained her extraordinarily weak condition. After the examination of her mouth she again became unconscious while sitting in the operation chair. Her face was excessively pale, and she had all the appearance of a person in very bad health. Herr Witzjel almost feared her extreme weakness might be due to some systemic complaint, such as phthisis, etc. Under such circumstances an operation might be dangerous. However, on consideration, he decided upon extracting the tooth after taking every precaution, on the ground that the weakness of the patient was due more to want of nourishing food and sleeplessness than to the pain. As he had foreseen a deep swoon followed, but passed slowly away, and the patient on leaving was advised to take as much nourishing food as possible, and to rest. A few days after she was so much better as to be almost ununrecognisable, and soon after went through some other operation without fainting at all.

SECOND CASE.

This was the case of a young and strong man who complained of bad toothache in the upper jaw, and indicated the first molar as the cause of his suffering, wishing to have it removed. It appeared carious and the nerve was exposed. The second bicuspid on the same side was also much decayed, but the nerve was unexposed. As a rule teeth where the nerves are exposed do not cause toothache, although they obstruct mastication, so it was thought probable that this bicuspid was really the cause of the pain. Herr Witzjel is of opinion that it is best always to remove the first molar as soon as it shows signs of decay, as the hole generally fills or partially fills, according to the age of the patient. Accordingly in this case, the first molar was extracted and the second bicuspid was carefully stopped with arsenic paste—a very painful operation. Herr Witzjel thinks in such a case it would have been best to have removed the second bicuspid, although it appeared less affected than the first molar; first, because the first molar, on account of its central defects, would have been more easily stopped; secondly, the extraction of a second bicuspid would have caused only a small gap; thirdly, through its extraction sufficient room was created for the coming wisdom tooth.

A third case was that of a maidservant who had had three pivots set, and had not suffered the usual inflamed reaction of the periostitis. She came again to have a fourth tooth stopped which had been plugged with wadding soaked in carbolised spirit. It was decided the tooth should be stopped, although the smell proceeding from the effected tooth was very bad. The root was filled with antiseptic cement and closed with amalgam.

For some weeks the patient was free from pain, after which a swelling in the region of the nasal process appeared. The following condition was then found: right cheek in region of the nasal process swollen, the swelling extending over the whole cheek even to the eyelids. Besides the swelling the patient complained of headache, feverishness, and loss of appetite. As the patient did not get better she decided upon having the tooth out, and after its extraction a thimble-full of pus issued from the alveolus. The tooth was deeply rooted; after its removal the swelling rapidly disappeared, and the patient became decidedly better and in a few days was perfectly well.

Dental News.

THE ANNUAL DINNER OF THE PAST AND PRESENT STUDENTS OF THE DENTAL HOSPITAL OF LONDON.

Will be held on Saturday, November 29th, at St. James' Hall, Regent Street, when the chair will be taken by Alfred Hill, Esq. Gentlemen, either now or formerly connected with the Hospital or Medical School, who may through inadvertence not have received special notice, and who desire to be present, are requested to communicate with the Dean at the Hospital.

MIDLAND ODONTOLOGICAL SOCIETY.

Meeting of the Members hald at the Medical Institute on Thursday, October 2nd, 1884; Mr. Thomas Howkins, M.R.C.S., Eng., presided. The ballot was taken for Mr. William Thomas, M.B., Lond., F.R.C.S., Eng., as an honorary member, and for Mr. T. Maudsley Howkins as an Associate, and they were both duly elected.

The following gentlemen were nominated for membership.—Edward James Gregory, L.D.S.I., D.D.S., Cheltenham; James F. Hinds, Coventry; C. S. Knight, Southsea; Thomas Scammee, Cheltenham; Alfred Edward Vickey, L.D.S.I., Coventry.

As Honorary Members.—Cornelius William Suckling, M.D., Lond.,F.R.C.P., Eng. &c,, Birmingham; Thomas Frederick Chavasse, M.D., Ed., F.R.C.S., Ed., &c., Birmingham; T. Edgar Underhill, M.B., Ed., F.R.C.S., Ed., &c., Tipton; James Yeomans Totherick, M.D., M.R.C.P., &c., Wolverhampton; Charles Robert Smith, B.A., Cantab, M.B., Lond., &c., Wolverhampton: William Henry Pope, L.R.C.P., Ed.,&c., Wolverhampton; Robert Luther Bayley, L.L.D., L.R.C.P., Lond., &c,, Stourbridge; Edward Crockett, L.R.C.P., Edin., F.R.C.S., Edin., &c., Wolverhampton.

As an Associate.—Thomas Miller, Birmingham.

A vote of condolence was passed to Mrs. Miller sympathising with her in the great loss she has sustained by the death of her late husband, Dr. T. Dixon Miller. The Hon. Treasurer and Hon. Secretary were requested to forward a copy to Mrs. Miller. Casual communications were made, and Mr. Clarke read a paper upon "A Few Cases in Practice" (see page 1006). The paper was fully discussed.

There were a number of interesting exhibits, among others a gag for use during the administration of anæsthetics.

STUDENTS' SOCIETY OF DENTAL HOSPITAL, LONDON.

ORDINARY GENERAL MEETING, OCTOBER 13TH, 1884.

C. TRUMAN, Esq., M.A., M.R.C.S., President, in the chair.

Messrs. Whittaker and Woodhouse, having been proposed at the last meeting, were unanimously elected members, and the following gentlemen were proposed by Mr. Campion and seconded by Mr. Rilot, viz.—Messrs. J. F. Colyer, J. Mansbridge, A. F. Croucher, A. E. Baker, and F. H. Vanderpant.

The Treasurer then read his report of the conversazione held on the 14th of July last, this, through the kind liberality of the president and officers of the hospital, showed a balance of £3 12s. 3d., with applause it was agreed that this amount should be passed to the funds of the society.

A special vote of thanks was moved by the president and seconded by Mr. Stainer, to Mr. F. N. Pedley, for his ability and untiring zeal in bringing the conversazione to such a successful issue.

Casual communications were brought forward by the president and Mr. J. Ackery, the former gentleman showed the models of 2 regulation cases, which he had recently successfully treated, at the same time explaining the methods employed in both cases; the latter gentleman presented the society with 2 models, showing transposition of the canine teeth in a very unusual manner, and remarked, that although some years had intervened between meeting with the two cases, yet in all respects they were alike. Mr. F. C. Heron showed a novel kind of cheek and lip retractor, and demonstrated the advantages to be gained by their use, and received a cordial vote of thanks. Mr. Booth presented to the society 4 skulls. Mr.

W. J. England, curator to the museum and library, in thanking Mr. Booth for the kind gift, took occasion to state, that he would be very pleased to receive objects of interest, to add to the existing collection.

The president next called on Mr. England to read his paper on "The Treatment of Dead Teeth" (see page 991), which was ably written, and listened to with great interest—at the conclusion a lengthy discussion followed, in which the following gentlemen took part: the President, Messrs. Stainer, Ackery, Pedley, Rilot, Gabriel, Sexton, Hern and Smith; at the termination of the discussion Mr. England replied. A vote of thanks was accorded to Mr. England, after which the president announced that the next meeting would take place on the 10th of November.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.

The first quarterly meeting of the General Committee of this Society was held on Wednesday, the 15th instant, at 38, Wimpole Street, W., under the presidency of Mr. Ernest Hart. The following were present: Dr. W. M. Ord, F.R.C.P., Dr. W. Clibborn, Mr. E. Bartlett, M.R.C.S., Mr. M. Greenwood, jun., L.R.C.P., Mr. J. Brindley James, M.R.C.S., Mr. F. Wallace, L.R.C.P., Mr. S. W. Sibley, F.R.C.S., Mr. E. Noble Smith, F.R.C.S., Ed., Mr. R. H. Coombs, L. R.C.P. (Bedford), Dr. W. A. Elliston (Ipswich), Dr. G. Fletcher (Highgate), Dr. J. W. Hunt, Dr. F. S. Palmer (East Sheen), Mr. T. C. Parsons, L.R.C.P (Wimbledon), Dr. J. Pickett, and Mr. Gilbert Walker, L.D.S.

The Chairman, having briefly congratulated the Committee on the success and continued progress of the Society, submitted the accounts for the quarter. From these it appeared there had been a net income from members' payments during the quarter of £1,405 12s. 3d., and an expenditure of £99 10s. 1d. The balance in hand on the 30th September was £2,740 18s. 5d., divided as followes; Sickness fund, £1,278 4s. 3d.; annuity, £839 5s, 11d.; assurance, £272 8s. 1d.: management, £351 0s. 2d.

The following report for the quarter was submitted by the Chairman, on behalf of the Executive Committee.

Gentlemen, during the past quarter, the progress of the Society has been maintained in a steady and encouraging manner, although there is little doubt the holiday-season has had some influence in checking the enrolment of new members. During the quarter, 70 proposal-forms have been received, giving a total of 570; and, although from these must be deducted a few withdrawals and rejections, and some members who have failed to pay anything beyond the entry-fee, it may be fairly stated the Society possessed a solid membership, at the close of the quarter, of 525; while, of the members to whom notices were sent of their second premiums falling due, not more than six have at present failed to pay, and some of these amounts may yet be received.

The gross receipts for the quarter are less than for the previous term (£1,405 12s. 3d., against £1,568 5s. 3d.). It must, however, be remembered that the first term ran from January 19th to June 30th, and contained a number of entry fees that will probably never be equalled; the income from this source being £257 15s. 6d. in the previous term, against £39 7s. 6d. in the present. If these be left out of the question, and the net income (before deduction of 10 per cent. for management) to each premium-fund compared, there is evidence of steady progress, as the following figures will show.

Sickness fund...	1st Term...	£685	6	6	2nd Term...	£739	17	9
Annuity „ ...	„ ...	...464	11	10	„ ...	467	19	1
Assurance „ ...	„ ...	...144	4	8	„ ...	158	7	11
		£1,294	3	0		£1,366	4	9

There are, as well, a number of first premiums on account of the present quarter, which were paid before the close of the previous term and included in its receipts; while many of the new members have, this term, only paid for a fraction of the quarter. If this be taken into account, it is safe to assume that next quarter's premium-income will exceed £1,500, and that the present annual business of the Society is more than £6,00

Investment of Reserves.—It will be noticed the total fund is already a large one, and the Executive Committee, alive to the importance of profitable investment of reserves, have made arrangements to secure the investment of £2,474 19s. 1d. in the purchase of £1,746 Great Western Five per Cent. Perpetual Rent Charge Stock, at a cost price of £143¾ per cent. There is no doubt as to the perfect security of this investment, which will return a net interest of £3 10s. 6d. per cent; and if a higher rate than 3 per cent. can continue to be obtained, the Society must be in a position to offer its members additional advantages to those promised.

Sickness Pay.—On September 1st, 460 members became entitled to claim sickness pay, and one such claim has been made, involving an expenditure, during the quarter of £6 12s. (twenty-two days at 6s. per day). The member claiming has now recovered, and no further claims have been made. It would be a mistake to draw hasty conclusions on such a subject; but if this is a fair test of future working, the sickness is likely to compare very favourably with that assumed in the tables. Arrangements have been made to carefully watch and tabulate this, and as soon as possible after the expiration of one complete year's risk—August 31st, 1885—a special report will be prepared on the matter.

Registration of rules.—After several of the delays apparently inseparable from the work of a Government department, the rules were finally registered and certified on the 26th of September, and, fortunately, there has been no occasion to modify in any way the code adopted at the general meeting. Arrangements are in progress for sending a neatly bound copy (with certificate of membership) to each of the members free of cost.

Revision of Proposal-form.—As it is necessary that future candidates should furnish a certificate of health, a form is under preparation to accompany a revised form of proposal This work has been kindly undertaken by one of the honorary treasurers (Mr. E. Noble Smith) and Dr. de Havilland Hall. The Society is also indebted to the treasurers (Mr. S. W. Sibley and Mr. E. Noble Smith) for having, at the cost of much time and trouble, acted as a sub-committee for the examination of the proposals sent in, and in the future these gentleman will have the co-operation in this work of Dr. de Havilland Hall.

The Secretary's Salary and Bond.—In pursuance of an understanding arrived at previous to his election, the Secretary's salary has been fixed at £200 per year from the date of his election, he undertaking to provide the necessary office accommodation at his residence, charging only out-of-pocket expenses for gas and fuel. This leaves the Society indebted to Mr. Ernest Hart (the Chairman) for the use of his house for committee meetings. Arrangements have been made for the guarantee of £200 on the part of the Secretary, with the Provident Clerks' Association, the largest society of the kind, with a subscribed capital of £50,000. The policy only awaits signature, and will be completed to-morrow.

Meetings of Branches, etc.—Arrangements have been made in several cases to have the Society introduced to meetings of Branches of the British Medical Association, and it is believed much good may be done in this way. Mr. E. Noble Smith has undertaken to read a paper on the subject at the meeting of the West London Medico-Chirurgical Society, at the West London Hospital, on the evening of Friday, November 7th; and the Secretary has been instructed to attend the meeting of the East Anglian Branch of the Association at Stowmarket on the 30th instant.

In conclusion, it will be seen that all the points included in the original programme are being adhered to and carried out; and, although continued exertion and activity will be necessary to secure the constant progress of the Society, it has already achieved a position of importance and security, while in the future its usefulness and influence may be largely extended.

October 15th, 1884. ERNEST HART, Chairman.

This report gave general satisfaction, and, after a short discussion, was adopted, together with the accounts.

A discussion followed, initiated by Mr. R. H. Coombs, on the payment of income-tax on the premiums; and, in answer to questions, the Secretary stated there was no doubt that an exemption of the amount paid as premiums from income-tax could be claimed by the members. To make this clear, he had made inquiries at the offices of the Chief Registrar and of Inland Revenue. Such exemption should be claimed by members on account of payments to a registered friendly society.

Some technical matters having been disposed of, suggestions were made by several members as to the best means of giving the Society increased publicity; and it was resolved to take steps to further increase and extend the Society. The meeting which was of a very cordial and unanimous nature, then terminated.

Correspondence.

RARE AFTER EFFECT OF NITROUS OXIDE.

To the Editor of the "British Journal of Dental Science."

SIR,—I wish to give a description of an impostor who is at present going the round of dentists, begging and obtaining money under false pretences. He called on me a week ago, and stated that his name was A. H. Broadhurst, and that he was a native of Hanley. He also told me several things about that town, which on consideration I know to be false.

In answer to a question he said he had applied to the Dental Benevolent Fund, and had received a sovereign a fortnight ago, ten shillings of which he returned a week afterwards. Doubting the truth of this statement, I wrote to the Honorary Secretary of the Association, and in reply received a letter from Mr. Oakley Coles in which he says, "No person has either applied to or received relief from the Dental Benevolent Fund under the name you mention, and *no money* has yet been returned from *anyone* who has been helped."

Some two years since a man called on several gentlemen in Devonshire and Staffordshire; stated that his name was Thomas Mansell, and gave several facts relating to myself; and on the strength of his representations he obtained various sums of money. I have heard, I am afraid too late, that this Broadhurst is the same man—no doubt he has several aliases. He is about five feet six inches high, has black hair and very dark eyes, a little hair on face, and wears a light skull cap and rather long dark overcoat. I hope that all members of the profession will refuse to help this man should he call upon them. For my own part I am anxious for him to pay me another visit.

Your obedient servant,

T. MANSELL.

Hamilton Square, Birkenhead.

To the Editor of the "British Journal of Dental Science."

Sir,—Under the above heading an interesting account is given by Mr. G. H. Crowther of the effects of nitrous oxide on one of his patients, a gentlemen of a nervo-sanguine temperament.

This instance of the extraordinary vagaries which are exhibited by some persons while under the influence of the gas is not, however, so rare as one is led to imagine, and such cases as have appeared in the *British Journal of Dental Science* could, I doubt not, be multiplied a hundred-fold if every dental practitioner in fair practice would contribute his quota to the subject.

This by way of suggestion, as I am sure any means by which a more definite knowledge of the properties of this very useful anæsthetic, than has hitherto been elicited, would be heartily welcomed by the profession generally.

I have used the nitrous oxide since Nov. 1868, and I must confess I have more than once been puzzled by what at the moment struck me as its strangely diversified action, not upon different temperaments—that I could have understood—but upon patients of a precisely similar diathesis. Generally, however, this inexplicable state of things has only existed pending investigation; some cases still remain surrounded by a halo of mystery which advancing science alone can dispel.

An empty or full stomach, an incipient cardiac affection, the existance of which may escape the most careful diagnosis, extreme nervousness, arising from apprehension variously based, the time of day, the age of the patient, and numberless other certain causes, might be given as accounting for what are in reality but natural and inevitable effects.

This is so well known by those who constantly use the gas as to need no amplification here. But there is a very common cause of violent and pugnacious displays of temper, which is often overlooked, because unthought of and therefore unsought for, which I will, with your permission, briefly illustrate.

In the spring of 1869, a young fellow, of a phlegmatic disposition, called upon me for the purpose of having a tooth removed *painlessly.* I put him under the gas, which he freely inhaled, and in due course he became apparently, and by all known tests, thoroughly unconscious. The mouthpiece was removed, and I was about to place the instrument on the tooth—the second left upper bicuspid—when the patient launched out his right hand, and with a side movement struck me violently in the face, drawing blood. Not satisfied with this, he performed a back somersault, clearing the operating chair (an old White's) and landing nimbly upon the floor, in front of a friend of his, who had accompanied him, and was seated a few yards in the rear, and (need I say?) amazed and almost paralysed spectator of the scene. Resolved upon performing the operation I leant over my patient as he lay sideawys upon the hearth-rug, still unconscious, and with the gag still between his jaws, and extracted the tooth. Immediately upon this the young man "came to himself," and wanted to know what had happened; as his eye rested upon the effect of the blow he had unwittingly given me; and being told, was profuse in his expressions of regret, as he volubly thanked me for relieving him of "a very troublesome member." Singular to relate, apart from a slight shaking, he suffered nothing from his acrobatic feat, and, as he assured me, was quite oblivious of the whole occurence.

Upon examination of the gas apparatns, I found a leakage in the rubber tubing which conveyed the gas from the receiver. *Verbum sat. sap.*

Your obedient servant,

Thos. I. Lloyd.

Bold Street, Liverpool.

TINCTURE OF CANNABIS INDICA AS A LOCAL ANÆSTHETIC FOR USE IN DENTAL SURGERY.

To the Editor of "The British Journal of Dental Science.'

Sir,—I am about to bring under the notice of the Dental Profession a subject which appears to me to be of such vast importance alike to the profession and the public, that I am tempted to lay myself open it may be to severe criticism. I am farther emboldened to adopt this course by the highly satisfactory results vouched for by patients. My system has in my hands proved so satisfactory that I operate with perfect freedom from anxiety, and can even undertake the extraction of a large number of teeth, and stumps, twenty-two in one case, in one sitting.

The plan adopted by me, is to dilute the tincture of cannabis indica some three or five times according to the probable duration of the operation. The diluted tincture is then applied in cotton-wool to cavities if such exist and also about the gums of the affected teeth. The beaks of my extracting forceps are also after being warmed, dipped in the diluted cannabis indica. In cold weather it is wise to dilute the cannabis indica with warm water. I was enabled by this method to remove thirty one teeth and stumps in one week. In the cases in which I have had resort to this plan, I have found my patients acknowledge the immunity from pain they enjoyed during the extraction and all expressed surprise and pleasure at the simplicity of the performance. The ordinary methods of anæsthetising are subject to danger, mine is as effectual and is devoid of the possibility of horm.

I am, Sir, your obedient servant,

Whitechapel Road. A. Aaronson, L.D.S..

VACANCIES.

Lecturer on Dental Surgery and Pathology to the Dental Hospital of London and London School of Dental Surgery, Leicester Square. Applications, with Testimonials, on or before Monday, November 10th, 1884, addressed to the Secretary.

Demonstrator of Non-Cohesive Fillings to the Dental Hospital of London and London School of Dental Surgery, Leicester Square. Applications and Testimonials by Monday, December 8th, addressed to the Dean.

BOOKS AND PAPERS RECEIVED.

Lancet; British Medical Journal; L'Odontologie; Pharmaceutical Journal; Dental Cosmos; Zahntechnische Reform; Independent Practitioner; Progrès Dentaire; L'Art Dentaire; Chemist and Druggist; Dental News; New England Journal of Dentistry; Monatsschrift des Vereins Deutscher Zahnkunstler; Dental Luminary; Gazette des Hospitaux; Southern Dental Journal; El Progreso Dental de la Habana L'Odontologia; Pharmaceutical Journal. Dental Caries, by Henry Sewill, L.D.S.; Dental Headlight; Items of Interest; Centrallblatt fur Zahnheilkunde.

British Journal of Dental Science.

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ON LANCING THE GUMS.*

By Edmund Owen, F.R.C.S., Surgeon to the Hospital for Sick Children, Great Ormond Street.

There are two reasons which, to myself, at least, seem good, for my venturing to bring this short communication before you this evening. The first is, that I have but a slight practical acquaintance with the subject; the second is, that if the question have the real importance which it was formerly considered to have, the sooner one puts oneself in the proper course the better. With a due regard to these two objects, I will prefer to throw out suggestions for any discussion that may ensue, rather than attempt to draw conclusions, or advance any theory of my own.

Not many years ago, almost every practitioner carried a silver lancet-case, where now he would carry a thermometor. The lancet then seemed to be used for severing every clinical knot in the maladies of infancy and early childhood, which he was not able to untie.

Steadily has the thin-bladed instrument fallen into disuetude. Its place has been filled, I regret to say, by various blades, which, whether used for lancing the gums, for venesection, or for the opening of abscess, are far less suited for the purpose. But to sigh over the sepulchre of the lancet and the leech (for they lie together in the same dark tomb), is not to answer the question as to why the gums are now so rarely lanced. Has an improved condition of gum been evolved as the result of countless years of sacrification? Has the process of dentition changed, or have our capabilities in clinical work improved? This last speculation is, I think, worthy of attention; but I am loth to admit it in its entirety, lest one should seem thereby to depreciate the scientific acumen of those many clear-headed and outspoken practitioners who have gone before, and with whom, in their writings, it is often both a pleasure and a profit to dwell.

Dr. Combe, in *The Management of Infancy*, remarks that, in the second stage of dentition, the gums are very painful, and marked with a pale or bright red elevation. He continues, that the infant "snatches at everything, and retains nothing. Nothing pleases him." He then speculates on the shape of the teeth as influencing their eruption, and appears to regard the process of dentition as being, for the most part, a mechanical one. Probably this theory was rather generally held a short time ago : the tooth was on the wrong side of a tough gum, through which the surgeon must help it with his lancet. Even at the present day, the public mind associates dentition with a certain amount of clumsiness or cruelty. How often does one hear such an expression as this: "My children always cut their teeth with diarrhœa, or a large head." Was not the real explanation of all this usually to be found in the fact of the child being improperly fed ? The obscure troubles often come on just as the infant is being weaned ; and, from what I know on the matter of dieting at about this period, I should be inclined to think that the source of irritation is much more likely to be in the alimentary canal than in the gums. That a slight loss of blood from scarifications of the gums might even in that case give relief I am willing to admit ; but I think the saddle must often have been put on the wrong horse. How have the public become possessed of the questionable pathology ; and how much truth is there in the theory ?

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*Read before the Medical Society of London, November 3rd.

To compare the practice of lancing the infant's gum with that of cutting through a fibrous band or roll of mucous membrane which is preventing the complete emergence of the wisdom-tooth of the adult, is not, I think, quite fair. It has been remarked to me that it is strange that the molar teeth of the child do not demand help from the lancet; and that the sharp edged teeth, the incisors, are those which are supposed to stand most in need of help. This fact is suggestive.

Dr. Billard remarked that, if all that authors had written on the aberration of the process of dentition should be recorded, an extended chapter of absurdities would be the result. And, quoting Guersant, he says, "most of the diseases of infancy have been attributed to teething. The difficulty of an accurate observation of diseases at this early age, and the little positive knowledge we possess in this department of pathology, have contributed greatly to the establishment of this opinion" (*Diseases of Infants*, 1839, p. 201).

There is one special trouble which is apt to be associated with dentition, though not dependant upon it, and which is very apt to be overlooked by the practitioner who is inclined to regard the eruption of the teeth as a morbid process ; that is, the early stage of infantile paralysis. I would not pretend that one should be able to foretell the on-coming of the paralysis, when summoned to attend a young child with obscure feverish symptoms; but what I would venture strongly to urge is, that one should not content oneself with the suggestion that probably all the symptoms are due to the teething. On several occasions when I have been consulted with regard to the later stages of that disease—the wasted or deformed limbs—I have heard the mother remark reproachfully, if not bitterly, that the doctor assured her that that illness, of many months ago, was but the effect of the teething. I would repeat that dentition is almost invariably a simple physiological process. I would submit that, of the many ills to which tender flesh is heir, few arise from teething, though naturally they accompany it. I would offer a caution, that a careful look-out be kept for one of the most insidious of these evils—essential paralysis.

Then, as regards the gum itself: what is the exact condition which demands scarification? When the alveolus is expanding, the tooth growing, and the enamel advancing, the gum must needs be fibrous and tough; but that it is not really inflamed is evident to the sight, as it is also from the fact that the infant delights in having it pressed and rubbed. Does one often find it red and swollen from inflammation? For years, I have carried a lancet in my card case, but I find no work for it upon the gums. Doubtless there are gums in need of scarification. Who sees them? Who lances them? Do the physicians? What have the family medical attendants to say upon the subject? Is lancing the gums much employed at the present day; is it little employed; is it "a good remedy out of fashion;" or do the rising generation suffer as little from its rather general disregard as they do from the increasing neglect of James's powder?

At the end of the chapter on "Teething," Combe advises that, when there is much local or constitutional disturbance, the gum should be scarified with a lancet, and allowed to bleed freely, though not in the expectation of the tooth immediately following; and that in the second stage, when the tooth is about to appear, the lancing may be demanded for putting an end to suffering and averting danger. I would ask, in conclusion, if this local and constitutional disturbance, resulting from dentition, is often met with now-a-days; and what are the "dangers" that are to be so averted? Last of all, I would like to hear from the dental surgeon as to what might probably have been the effect upon the development of the permanent teeth of the once widely spread practice of lancing the gums.

MICROSCOPICAL STUDIES UPON THE ABSORPTION OF THE ROOTS OF TEMPORARY TEETH.*

By Frank Abbott, M.D.

The fact that temporary teeth, previous to the appearance of the permanent ones, are considerably reduced in size, often lacking roots, often consisting only of a thin shell, and exhibiting a corroded festooned surface, has long since attracted the attention of observers. It has never been doubted that a persistent, though gradual irritation causes the absorption; but what the real cause of this irritation is, we cannot tell. The idea that in all cases the pressure of the growing permanent tooth is the direct cause must be abandoned, since clinical observation shows, that the absorption of a temporary tooth may take place though far distant from the permanent one ; nevertheless, we maintain that the growth of the latter, indirectly at least, causes the irritation, and consequent absorption.

The assertion of Tomes that it is due to the presence of freely vascularized papilla does not explain the decrease of the dental tissues, for the papilla is nothing but medullary tissue, such as we meet with, in any part of the organism where one tissue is about to change into another. Such a papilla can be the cause of the absorption, as well as its result. Another assertion, that the medullary cells eat out the dental tissues by their active growth, or by their amœboid motions, is insufficient for the explanation of the loss of the lime-salts in the dental tissue, the presence ot circular or semi-circular excavations and bays, so characteristic of the melting process of the cementum and dentine of deciduous teeth.

Since we know that pieces of dead bone or ivory may be absorbed with figures similar to those found on the surface of temporary teeth, the idea possibly becomes admissible that, owing to the presence of an acid, first the lime-salts are dissolved out within certain territories of the dead bone tissue in a merely chemical or passive way, whereupon the soft medullary tissue penetrates the space thus established. Quite different, however, will be the conception of this process if we bear in mind that the temporary teeth, as well as the permanent ones, are made up of living tissues, and an active participation of these tissues must be expected in the process of transformation of the dental into that of medullary tissue.

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* Whitney Memorial Prize Essay of the Dental Society of the State of New York.

As the process of absorption is closely allied to the process of inflammation, and active changes of the dental tissues have been proven to follow inflammation beyond any doubt, we may *a priori* expect such changes of the bone tissues of the temporary teeth in the process of absorption also. I shall try to prove in this paper that such changes really do occur. In the light of the most advanced modern views concerning the structure of the dental tissues, we consider cementum, dentine, and enamel as endowed with properties of life, or, in other words, as pervaded by living matter in the shape of an extremely delicate reticulum. In this view not only the cement corpuscles and their coarser offshoots contain living matter in the shape of so-called "granular protoplasm," but the whole basis-substance present, between the cement corpuscles is alive also, only the minute meshes of the living reticulum holding a gluey basis-substance saturated with lime-salts. In the dentine, not only the tenants of the dentinal canaliculi (the dentinal fibres) are alive, but the whole mass of gluey and calcified basis-substance between the dentinal canaliculi is also living. The same holds good for the enamel, in which the delicate fibrilæ between the enamel prisms have positively been proven to be living matter, but the prisms are pierced by living matter, though the latter has not been demonstrated directly, but indirectly in morbid changes of the enamel. Of the cementum we know that each cement corpuscle occupies the centre of a more or less globular territory of basis-substance. If, therefore, circular fields of absorption appear in the process of inflammation and absorption of the cementum, we can readily trace these territories in following out the portion affected by the process of absorption. But how shall we explain the bay-like excavations in the dentine and enamel so often seen in reduced temporary teeth where there is nothing known of territories? Here the first difficulty sets in, due to the lack of knowledge of the history of the development of dentine and enamel. Czermak's interglobular spaces indicate the presence of such territories in the dentine, the presence of which, however, can be proven only, after accurate researches in the history of development.

Granted that the dissolution of lime-salts takes place in globular territories in the dental tissues, the next question will be, how do the medullary elements appear in such spaces? Do they migrate or penetrate from without, or do they originate, in part at least, from the living material present in all dental tissue ?

ABSORPTION OF CEMENTUM.

The process of absorption of a provisional tooth begins on the cementum of the roots. The latter exhibits before the beginning of this process the features of cementum of permanent teeth. Primarily, the absorption is marked by the appearance of the well-known fields so commonly met with in the process of osteitis, that is, excavations on the surface, either semi-circular or composed of a varying number of semi-circular festoons, all of which are filled with medullary elements, multinuclear bodies, or a delicate myxomata, in part a bony, in part fibrous connective tissue, blending with the adjacent myxomatous or fibrous pericementum. The communication of the excavations with the pericementum is either widely gaping or through a narrowed neck on the surface of the cementum. Sometimes, however, in the sections the excavations appear isolated, without any communication with the surface, which latter instance, however, will certainly not entitle us to deny the existence of such a communication on a plane above or below that of the section. In the excavations the cementum is unquestionably reduced first into medullary, afterward into myxomatous or fibrous tissue. By closely watching excavations of a more recent date at the periphery of those in communication with the pericementum, we notice that the lime-salts and the basis-substance proper are missing, and are replaced by a uniformly granular protoplasm, or a varying number of faintly marked medullary elements, each of which may contain a central nucleus. We can trace a gradual change of the tissue of cementum from a dissolution of lime-salts to the appearance of a mass of granular protoplasm, and at last to the formation of medullary corpuscles. The circular shape of the excavation is in all cases undoubtedly due to a dissolution of the lime-salts, and afterwards of the basis-substance proper, within the territory of a cement corpuscle. Sometimes we see an enlargement of the lacuna and the cement corpuscle itself, the latter splitting up into a varying number of glistening lumps, which are readily stained by an ammoniacal solution of carmine. In other instances the whole territory of a cement corpuscle is transformed into protoplasm, and the reappearance of such protoplasm is traceable through broad offshoots to neighbouring cement corpuscles. In a third instance a varying amount of the territory has assumed a delicate fibrous appearance, caused by an early grouping of the medullary corpuscles into fibrillæ. In neither of these instances will it be doubted that the cement corpuscles themselves, or the living matter held in their territories, have in an active way taken part in the reappearance, first of protoplasm, and afterwards of medullary corpuscles. The theory that immigrated medullary corpuscles, or "leucocytes," have replaced the former cement tissue must be abandoned as soon as we can trace a gradual transformation of the tissue of the cementum into medullary tissue. The latter immediately assumes the characteristic features of a myxomatous or fibrous connective tissue, in connection with the pericementum.

From this point of view there is no difficulty in explaining the appearance of multinuclear bodies, so-called "myeloplaxes," in the dissolved territories. We know that such formations represent a stage of development of cementum, and they simply reappear as soon as the basis-substance of an already-formed cementum is dissolved or liquefied. In fact, nothing else is required but a reformation of basis-substance and its recalcification, in order to reproduce new bony tissue, such as we often meet with on the periphery of absorbed cementum.

The result of the absorption is next a myxomatous or fibrous connective tissue freely supplied with newly-formed blood vessels. In this tissue an active new formation of bony trabeculæ of bone takes place, characterised by the presence of large and irregular bone corpuscles. The widened socket, or dissolving surface of an absorbing provisional tooth, is not infrequently filled with newly-formed bone. The newly-formed layer of cementum in part shows circular fields (territories) of bone tissue, each of which may contain a varying number of bone corpuscles, or there is a uniform reduction of the original cementum, the boundary of which is made up by regularly arranged medullary corpuscles, so-called "osteoblasts."

On the neck of the tooth the excavations penetrate not only the layer of the cementum proper, but also the layer of the subjacent dentine, which we know to be destitute of dentinal canaliculi. Here again we observe at first a dissolution of the basis-substance in globular fields, which appear filled at first with a finely granular protoplasm, lacking nuclei, afterwards with usually nucleated medullary corpuscles, and at length with a slightly fibrillated tissue, the latter undoubtedly originating from a splitting of the medullary corpuscles into a number of delicate spindles. The surface of the neck of the tooth likewise exhibits the characteristic bay-like excavations which are filled with nucleated medullary corpuscles, or with multinuclear protoplasmic bodies. From what I have seen, I cannot doubt that the nuclei under all circumstances are secondary formations, and cannot be regarded as the future bone corpuscles. A territory of bone tissue will form only after the protoplasm has assumed a uniform granulation, and the bone corpuscles will develop out of this protoplasm, by an increase of living matter at certain regular intervals. The result of the absorption and reappearance of the embryonal condition of the tissues, constituting the neck of the tooth, results in the formation of new bone tissue, either in the shape of globular fields (territories) of newly-formed bone tissue, or in the formation of a thin layer of regularly lamellated bone tissue, blending with that formed out of the cementum of the roots.

Bodecker in his article on the distribution of the living matter in the dentinal tissues (Dental Cosmos, 1878-79), describes and illustrates the neck of a tooth, calling it an anomalous formation of cementum. From what I have seen I cannot doubt that his figure is taken from a deciduous tooth, exhibiting newly-formed bone tissue on the neck. Unquestionably such bony formations are not lasting, but are reformed into medullary tissue with the advancing absorption of the dental tissues, either leading to the formation of new bone or of fibrous connective tissue.

THE TREATMENT OF DEAD TEETH.

By Walter J. England.

(*Concluded from page* 995.)

It being in my opinion necessary in all cases (with a certain exception to be mentioned hereafter) to clear the canals of all *débris*, I will not take up your time in describing the instruments and methods used as they are well known to you, and will content myself with calling your attention to the dumb-bell shape of the canals of the first upper bicuspid. The fact that it often has two roots and that they sometimes bifurcate low down, and to take care when you are using the instrument, that it does not pass through the foramen ; for if it does it may push before it *débris*, which will occasionally set up such an amount of irritation as will cause the loss of the tooth. This is more likely to happen in the case of young patients where the fangs are not completely developed, than among adults where there is generally such a decided narrowing at the apex as to prevent the progress of the drill to a considerable extent. If in using the drill it should break, as occasionally happens, and a portion remains fixed or wedged in—if it is a large piece it can generally be very easily removed, but if unfortunately it is small and high up in the fang, it will be necessary to exercise care and coaxing to remove it—if this does not seem possible, an attempt may be made to drill past it; but this will have to be done with great caution, or else matters may be rendered more complicated by pushing the piece through the foramen which would necessitate the removal of the tooth.

But if at the point of obstruction the fang is not considered to be large enough to bear drilling past, the following method was successful in a case that came under my notice: the piece of drill was left in, a dressing of carbolic and arsenic on wool placed in the fang, and the tooth filled first temporarily and then permanently. Of course it is evident that this method would not be of the slightest use, if there were any suspicions of a sac being present at the end of the fang, in which case the obstruction must be removed or passed, or else the tooth will have to be sacrificed.

And now, gentlemen, in order to condense as much as possible so as not to occupy too much of your time, I have endeavoured to formulate a plan of treatment, and in order to do so, have grouped dead teeth into five classes, the treatment of each class differing slightly, and upon which I shall be very happy to hear your opinions at the close of this paper. Now, truly, is the time to compare notes and endeavour to profit by the comparison, so that when we are called upon to enter into private practice, we may have a clear and well-grounded idea as to what is the best thing to be done under the existing circumstances and conditions, as we shall not then have the same opportunities of asking for the able and so willingly given advice which we have the privilege of enjoying at the present time.

The first class which I shall bring before your notice to-night are—

"Those partially necrosed teeth down the canal or canals of which there is a discharge of matter, and no fistulous opening in the gum." These cases are in my opinion the most difficult to treat, require the most time, and the results are the least satisfactory. With teeth in such a condition it is necessary that the fangs should be well opened up to the foramen, and a loose dressing of some antiseptic passed right up the canal. I prefer strong carbolic or eucalyptus and iodoform, but great diversity of opinion exists as to which is the best antiseptic to be used. These dressings must be renewed every two or three days till they come out perfectly clean and free from odour. This often takes a long time, but as soon as the tooth appears to be tolerably healthy the dressing can be left in and the tooth temporarily filled, and if it continues to be comfortable after a month or two, permanently plugged ; and here again the student is perplexed as to which he shall use from the number of materials available for his choice, in order to fill the canals. At one time gold was considered to be the only thing fit for this purpose, but owing to the difficulty and trouble of packing or removing, if need be, either it or amalgam into or from the canals they are not much used, and as a general rule may be considered positively objectionable. When permanently filling the canals of these teeth, I prefer to use tightly-packed cotton wool dressed with eucalyptus and iodoform if I apprehend the slightest discharge, in order that it may be absorbed and rendered harmless. I have tried this many times and am very well satisfied with the results.

If I am certain that the discharge has ceased, I like to use either oxychloride mixed up with cotton wool, or gutta percha.

In cases where the canal walls have been accidentally perforated, the preference should be given to the latter. I may as well take this opportunity of stating that if you find on using a Donaldson that the fang curves, it is better even in these cases to remove all *debris* as well as you can, rather than decrease your ultimate chances of success by piercing the canal wall, in the attempt to use a drill.

The next class I shall call your attention to : "Are those teeth which have in connection with them a fistulous opening in the gum ?" The teeth in this class are much easier to treat than those of the preceding ones, and you can venture to take far greater liberties with them. The treatment will be, to well open up the canal, enlarge the apexal foramen, aad pass up it the fine nozzle of an Hyperdermic syringe, filled with an antiseptic, and through the foramen thoroughly wash out the sinous leading to the fistulous opening. This must be done till the whole tract has been well washed, and your method of procedure will then depend on whether the patient will be able to pay you another visit ; if so, dress fang and close cavity with wool and mastic. When you see the case again repeat syringing ; see the fluid passes through the foramen and appears oozing from the opening in gum—when this occurs, fill permanently, but if you cannot see the case again you can venture to plug permanently, but take the precaution of previously drilling, if possible, along what you judge to be the track of the sinous, right through the external plate of the alveolous, so that the opening is just above the tip of the root. This method of making an opening through the external alveolar plate, can occasionally be practised with advantage in troublesome cases of the first class. The object of this is to afford a free vent for the matter which will be secreted and discharged at intervals, though in the course of time this may become less and less till it cease altogether.

In class three, I place those teeth whose nerves have been previously destroyed by means of a devitalising agent such as arsenic."

In the majority of these cases it will not be necessary to open these canals up by drilling, as with care the nerve can often be removed entire and the canals thoroughly cleared out. The use of the drill is only advisable in those cases where the opening in the fang is so constructed as not to admit easily the nerve extractor.

After clearing them, wash them well with carbolic, dry, and place up them a loose dressing of eucalyptus and iodoform, fill the cavity with gutta percha, and tell the patients if they experience any slight pain or swelling to come and see you at once. If the tooth remains comfortable let it remain as it is for a month, remove the temporary dressing, etc., and permanently fill, using for the fang a similar dressing only more lightly packed. If circumstances required it I have permanently filled the tooth after the temporary one has been in only a few days; but in doing so I consider I am running the risk of failure.

In my fourth class I have placed "All those cases in which, as for instance, in some lower molars the fangs either from their position or being filled with outer dentine are very difficult to be got at; and it is an extremely doubtful matter if they can be thoroughly cleared out and dressings properly placed in them.

As soon as this is perceived, I think the best thing to be done is not to attempt to clear them at all, to simply leave them alone and place over the orifice of each canal a little pledget of wool moistened with carbolic, so as to enable it to pick up a minute portion of arsenious acid, and then permanently filling the tooth. A little periostitis sometimes arises but as quickly subsides, and it is astonishing in these cases what favourable results arise from this treatment.

I shall now consider as my fifth and final division, "These cases where from violence or other causes, or after the insertion of a filling the tooth has died, and the patient is not willing to undergo the proper treatment. In these cases pain can often be relieved, and the tooth preserved sometimes for years by performing the operation of "Phirodontrophy," which consists of making beneath the festoon of the gum, either in front or at the side, a slanting opening into the pulp cavity, the lowest point of the opening being external; this will let out any gases that have collected and drain off discharges.

Unfortunately, however, it occasionally happens that after completely closing up the cavity in the tooth troublesome symptoms will arise; the only thing to be done is to freely open the cavity and canals again, place in loose dressings, treat gum with aconite and iodine if any periostitis be present; see that the bowels act well, and continue loose dressings till the tooth is again in a condition for filling.

And now in conclusion, Gentlemen, let me remind you that I have written this paper with the object of promoting discussion, and consequently, have not hesitated to state what opinions I hold at present, and I shall be very happy to hear from you on what points we agree or disagree, and trust we all may benefit by your criticisms.

NOMENCLATURE OF THE ART AND SCIENCE OF DENTISTRY.*

Report by J. Taft, Chairman.

Language is the vehicle of thought from one person to another. This communication is perfect and efficient in proportion as there is precision and definiteness in the language used, and a correct and uniform understanding of its meaning. Language should be definite and used upon such a basis as will give it the greatest range of usefulness and most enduring stability. A word is an utterance of the human voice which expresses a thought, or names a thing or action. The imperfect use of words occasions confusion of thought and ideas and impairs the value of language. Perhaps there never was a greater tendency to mutilate, adulterate, and dilute a language, than now exists in respect to the English. For this there are several reasons. It has largely incorporated with, it, and indeed is mainly made up of material from many other languages. The large admixture of different nationalities in this country is a prolific source of vitiation of pure English. People of other nationalities abound with us; their efforts to use our language result, as a rule, in a mixed speech quite at variance with pure English. Their errors and incongruities are too often imitated by those who should avoid them. Education has become popular, and a large proportion of the American people desire to appear at least, to be educated and cultured. The reality is, however, often much below the assumption ; hence the misuse and abuse of language greatly abounds. Many are in the habit of using words and phrases, of the true meaning and power of which they have little or no conception, even in the grosser sense. The would-be scientist is often guilty of the most absurd use of names, terms, and phrases. The press pours fourth a ceaseless current of literature, incalculable in amount, the preparation of which is too often in the hands of those unfitted for the work. The free indulgence in slang words, phrases, and provincialisms, tends greatly to the corruption of language. Loose and careless habits in the use of language weaken its power, and lessen its efficiency.

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*A Paper read before the American Dental Association.

"The Anglo-Saxon, with its immediate descendant, the modern English, is said to have the strength of iron with the beauty of burnished steel. It is the mother-tongue of the English language. About three-fourths of the words in common use are from this source. Not only in the number of words but in their peculiar character and importance, as well as their influence on grammatical forms, Anglo-Saxon constitutes its principal strength ; and at the same time its chief peculiarities of structure and idiom are essentially Anglo-Saxon. From the same copious fountain have sprung words designating the greater part of the objects of sense and the terms which most frequently occur in discourse, and which recall the most vivid conceptions, as sun, moon, earth, fire, day, night, etc. ; and words expressive of the dearest relations, the strongest and most powerful feelings of nature from our earliest days, as mother, father, sister, brother, wife, home, etc. The language of business, of the shop, of the market, and of every-day life, our national proverbs, our language of humour, satire, and colloquial pleasantry, the most energetic words we can employ, whether of kindness or invective ; in short, words expressive of our strongest emotions and actions, in all the most startling scenes of life from the cradle to the grave, are derived from the Anglo-Saxon. Every speaker or writer, then, who would not only convince the understanding but reach the affections, should adopt, Anglo-Saxon expressions, which, from early use and dearest associations, excite emotions and affect the heart."

Every department of human occupation has its peculiar names, words and phrases. In some they are far more numerous and prominent than in others. This is true in a remarkable degree in the professions, for instance, law, theology, and medicine ; distinctive names and phrases more abound in the last than in the former two. There seems to be a necessity for this, growing out of the multiplicity of parts and their relations to each other and their reciprocal influence.

In medical literature a large proportion of the special names are taken, changed but little, if any, from other languages, and chiefly from the Greek and Latin. The propriety of anglicizing these names is a question about which there is some diversity of opinion. The rendering more plain and understandable these names and phrases would seem to be very desirable, inasmuch as a large majority of those who engage in the study of the branches in which they so greatly abound have but little or no knowledge of any other language than English. Oftentimes the student will struggle with names and phrases without a knowledge of their meaning months and even years. Nothing that can be as well designated by the pure English word or phrase should be named by words of another language, because a large proportion of those who study the professions are not familiar with those languages, and especially the Greek and Latin. Usually the names from these languages used in descriptive anatomy and pathology are not more expressive nor better in any sense than well-chosen English names and phrases. A large share of the labour in mastering these branches consists in becoming familiar with the nomenclature.

The growth of language is slow, and change cannot be rapidly introduced. In the use of language for conveying thought, that which is best adapted should be employed, using only those words and terms that will most clearly and fully designate the thought, object, or action. Many names are used upon analogy or association that will hardly stand the test of close criticism. To some of these reference will be made as we proceed. It is said that in the development of art and science new words and phrases are a necessity, but in introducing these caution should be exercised. Every new word, name or phrase introduced should be made clear and comprehensible to every reader before it is generally employed. Its origin and significance should be such as to commend it to the judgment of every one of general culture.

In the art and science of the dental profession there are many *distinctive* names and phrases. For the most part, perhaps, these are well chosen, and as expressive as is possible in the present state of our langauge. There are, however, quite a number of nominations of very questionable propriety. To a few of these we now propose to call attention.

The different teeth have different names,—some of these sufficiently distinctive, as for example, the incisors, the molars, the bicuspid, the cuspids, etc. To some of them, however, names are frequently given which are of doubtful propriety. For example, the cuspid teeth, both superior and inferior, are often called *canine* teeth: this simply because they approximate the form of the dog's tooth. This is certainly a very faulty basis for a distinctive name, inasmuch as many other animals have teeth of a very similar form,—indeed, quite as pointed as those of the dog. The word cuspid means a point, and when applied to a tooth means a pointed tooth. No other word can better designate this tooth. These teeth are also sometimes called "eye teeth," as applied to the superior, and "stomach teeth," as applied to the inferior. These appelations are wholly unwarranted by the forms of the teeth, or by any relation they have to the parts referred to in these names.

The first permanent molar is often called the "sixth-year" molar, and sometimes the "six-year-old" molar, the later being a crude expression that no one of just taste would tolerate for a moment. The ground of this nomination is the fact that this tooth is usually erupted when its possessor is about six years of age. The inappropriateness of this name is apparent from the fact that the tooth may appear at any time from five and a half to seven years of age, and in some instances even later.

The name as used would seem to indicate the age of the tooth rather than that of the possessor. There is no more propriety in thus designating these teeth than in calling the second molar the "twelfth-year" molar, or the third molar the "eighteenth-year" molar, or in naming the bicuspids according to the years of their eruption. The appelation "first permanent molar" is clear and distinct, and cannot apply to any other tooth; let this, then, be the name by which this tooth shall be designated. The third molar is known by several names. Some think it entitled to the Latin name, and hence call it "dens-sapientæ," and others are content with the same name in English, and call it the "wisdom-tooth." The better and more distinctive name, however, is the third molar; this is clear and understandable by all, and is quite sufficient for its designation. The multiplicity of names always tends to confusion.

That part of the teeth resting in the alveolus and by which the attachment is made is denominated the "root" and the "fang." The latter name was in far more common use some years ago than now; one of these names is quite sufficient to designate this part of the tooth, and the word "root" is certainly more appropriate than the word "fang." None could be mistaken by this application of this word, while "fang" is more appropriately applied to the sharp-pointed body that protrudes from a socket or base. Nothing is gained in any respect by the use of these two words to designate that part of the tooth by which it is attached to the jaw. Let the word "root" then be adopted for this designation to the exclusion of the word "fang."

CLINICAL STUDIES ON THE COMPLICATIONS OF THE ERUPTION OF THE TEETH IN MAN.

By Dr. E. Magitot.

(*Continued from page* 1006.)

The pathological chart, by which we shall trace the course of the osteo-periostitis of the maxilla, presents certain secondary phenomena, on which we will now dwell. The most important of these is the closure of the jaws. This is a complication occurring in connection with the mucous membrane as well as those of the bones with which it more frequently takes place. The authors who have described this condition, have almost to a man adopted the view which recognizes it as being a spasmodic contraction, which is reflex, as well as to an inflammatory action taking place in the elevating muscles.

The first interpretation needs support, and in spite of the authorities who have offered examples, such as Salter, Duplay, etc., we are not aware of any fact which has been rigorously observed which could be termed a case of reflex spasm. The error has thus crept in here, for under certain circumstances the inflammatory process may proceed so slowly, being as it were latent in the centre of the bone; it makes more rapid advances than in other cases in which the pterygoids and masseter muscles become directly attacked.

From the list of muscles, causing this closure of the jaws, we must exclude the temporal, which cannot be affected by the osteitis unless such should attack the greater part of the ascending ramus and these cases are rare. The pterygoids are only attacked in the event of the osteo-periostitis of the angle of the lower jaw. But the muscle which is most ordinarily attacked is the masseter. So frequent, indeed, is this the case, that it may be looked upon as the rule. The contraction of this muscle is sufficient, indeed, to lead to the propagation of inflammation in the periostitis which overlies the exterior face of the lower jaw. The phlegmon coming in contact with the muscular covering spreads, and a genuine myositis takes possession of the entire muscle. This complication is unquestionably one to which immediate attention should be given, for in a subject the movements of whose mouth are in a normal condition, a few hours suffice to produce immobility of the lower jaw. That the anatomical nature of the masseter contracting hinges on the inflammation of the muscular tissue has been confirmed by the two *post-mortems* cited above by M.M. Gauget and Richet. In the first case, the muscle had been transformed into a black pulpy mass that no longer adhered to the bone. In the second M. Richet found the muscle had been changed into fibrous tissue caused by the longstanding nature of the contraction. This last justifies at its out-set, the operation several times repeated by this surgeon upon the bony section after the method of Esmarch's or Rizzoli's. There still remains to us for point out one more complication connected with the lesions of the bones. In certain cases, the whole of the alveolar arch undergoes a general compression, that is to say, the series of teeth at the time of the attempted eruption of the wisdom tooth. This compression is an accredited fact; it is frequently met with in individuals whose teeth are irregularly arranged in the inferior jaw, and become subject at the eruption of the wisdom tooth, to an abnormal development. This condition has not ordinarily any other effect at the time if the eruption of the wisdom tooth be normal. We do not agree with M. Després that to this compression may be traced the decay and falling of the teeth, nor do we endorse his precept of sacrificing a tooth on each side of the jaw to ensure a more regular arrangement of the others. Such a practice, though good in itself, in ordinary well demonstrated cases of compression, with consecutive deviations, could only take effect upon gingival or alveolar osteo-periostitis of chronic form. It is in one or other of these last affections that we must class the phenomena so badly defined elsewhere, of which M. Després speaks.

2° Nervous complications.—The nervous complications attributable to the anomalies of the eruption of the wisdom tooth, may be distinguished under two varieties; neuralgia and disorders connected with the organs of the senses. Under these we shall not mention those muscular contractions of the spasmodic kind, described by several writers and accepted by Heydenreich for the reason already referred to; this complication having for us an exclusively inflammatory origin.

Neuralgic complications are seated either upon the nerves of the teeth themselves, or upon the different ramifications of the face, skull, neck, shoulder or trunk, in anatomical relation with the emissary branches, deep or cutaneous, belonging to the dental nerves of one or other of the jaws.

The essential cause of these neuralgic affections, is from abundant evidence, the compression of the alveolar nervous fibres caused by the tooth imprisoned in its bony and unyielding situation. This compression acts principally upon the branches that penetrate to the centre of the tooth by the roots; but it can similarly affect the fibres in the alveolar periostitis, which has the same anatomical origin.

Neuralgic affections which assume all the forms that com; under our observation spring from the same neuralgic origine disorders in the passage of the dental nerves: orbital derangements caused by cutaneous anastomosis with the corresponding branches of the fifth pair; cranial disorders having a similar source; auricular disorders caused by anastomosis or the auricular temporal branches of the cervical plexus; cervical and brachial disorders caused by the anastomotic ramifications of the cutaneous branches of the brachial plexus. As will be remarked, we only admit under this head, such neuralgic affections as are caused by the continuity of the nervous fibres and not by reflex action. Observation teaches us indeed that some of the most intense and obstinate neuralgic affections are due to this origin, rarely extending in their further departures beyond the upper region of the trunk, or that of the arm; rarely to the fore-arm. Moreover, they do not pass the median line, which is the general law in neuralgic affections.

We may mention here that neuralgic disorders pre-exist often apart from all inflammatory affections, and even from all suspicion of such on the part of the wisdom tooth. Such indeed represent in some cases the only symptoms of this eruption, and this is a very important fact from the diagnostic point of view, which ought to have, in this particular case for its special object, the age of the selected subjects attacked and the local state of the wisdom tooth. Direct observation will disclose to the observer either the phenomena of compression, or, in a certain degree, inflammation of the gums or of the bony tissue; but in these latter cases, the neuralgic element presents in general an intensity and an importance disproportionate with the inflammatory state.

The pain assumes either a continuous or intermittent form. If continuous, it is capable of acquiring an intolerable intensity, an example of such having come under the observation of

Malayon Desirabode the patient being driven by his sufferings to commit suicide.

The periodical form is always diurnal, as in the examples brought forward by Hunter, and the complications cease at the simple incision of the gingival cushion.

As to orbital, auricular, facial, cranial, neuralgia, etc., we, together with many other writers, have brought forward so many examples that it is too well known to require further development. The complications of the organs of the senses and such as are reflex, complete the nervous phenomena. Among the examples brought forward by writers, many are perhaps fully authenticated; we are justified in considering, such facts as altogether exceptional. However this may be they have pointed out, in conjunction with this review, certain facts of amblyopic complicated with intra-ocular disturbances. Such are the examples that fell under the observation of Sulter and of Hyde Salter, reported by Heydenrich ; one of interstitial keratitis of the left eye, we owe to Dr. Parinand, and is reported by himself ; and above all, one due to Duplay, transcending all in importance, in which disorders of the sight and hearing have been traced by incontestable proofs to the difficult eruption of a wisdom tooth. We should like to touch upon similar demonstrative characteristics. In the case of Munro, who attributed to this cause, chorea in a young girl ; of Portat, who described epileptic and hysterical convulsions, and of Esquirol, who by following Toriac's method, cured a case of madness by a crucical incision of the mucous membrane.

(*To be continued.*)

THE ORIGIN OF DEFECTIVE ENAMEL.

By W. H. Eames, D.D.S., of St. Louis, Mo.*

In a former paper on the subject of defective enamal structure, a. synopsis of the views of the most prominent writers was given upon the subject. The present paper aims at extending these views.

The theories entertained by all writers old and new agree in the main as to the cause of defective enamel structure.

The various forms of defective enamel which, up to the present time, have been known as rocky, ridged, furrowed, cribiform, pitted and grooved enamel, attributed to one cause, viz., arrested development, will be considered under two general heads, "Congenital" and "Non-Congenital" or

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*(*Abstract of a paper read before the Illinois State Dental Society*).

accidental. The first class, " Congenital," will include all of those defects which are supposed to originate during the formative period of the tissue ; the second class, (non-congenital or accidental), those forms which originate after the complete development of the tissue.

Thus the first class, or congenital, comprises some forms known as rocky or ridged enamel; simple pits in the structure found on the points of the cusps, or on other portions of the tooth, and especially noticeable in cases where but few of the teeth are affected : grooves or fissures in the coronal surfaces of the bicuspids and molars. The second class (non-congenital or accidental) includes some forms of grooved or furrowed teeth not considered in class first, described as due to syphilis, mercury, etc. ; also, cases presenting the same characteristics which occur later in life, in the form of grooves at the gingival border of the molars and bicuspids, usually considered as cases of erosion, abrasion, denudation, atrophy and caries, which in my opinion, have a common origin.

The origin of the first class, our author believes, is not due to constitutional disturbance effecting the epithelial structures, *e.g.* ; as measles, eruptive fevers, mercury, syphilis, eclampsia, etc., said to cause arrest of development and so defective enamel structure, but to a defect in the formative organ, which might, in cases of pits, be termed a blight or death of the ameloblast, or in cases of fissures a " rupture," being the result of a separation of the ameloblastic layer.

Study of development, according to the best and latest authority shows the enamel organ envelopes the pulp or dentine organ in the form of a hood, corresponding somewhat to the form of the future tooth. It is composed of three layers, or strata ; an external and an internal epithelial layer, and a reticular layer ; the external and internal layers are formed of the columnar cells of the malpighian layers of the epithelium. The internal layer of cells or ameloblasts, having undergone a change in length, are much longer than the cells composing the external layer. The cells composing the internal layer, are termed " *ameloblasts*," as they form the dentine. How this process of amelification takes place is uncertain. Recent explanations of the phenomena of enamel formation, by Prof. Bodecker, Williams and others, are not considered in this paper.

The epithelial cells are liable to undergo retrogressive change and often rapidly the enamel organ is exclusively made up of this class of cells hence is subject to changes noticeable in epithelial structure elsewhere ; a blight or death of one or more of the cells of this organ may be looked for at any time. If one or more of the ameloblasts die, or be wanting in the internal layer of the enamel organ, corresponding rods will be in defect, pits will hence occur. "If the ameloblasts were missing when the process of amelification commenced, this circular pit would extend from the external surface of the enamel to the surface of the dentine beneath; but if the cells die after the process of amelification is partially completely, then the depth ol the pit will correspond to the length of the rods which were left unfinished; the cells surrounding the missing ones being unaffected would complete the work assigned to them, and thus the walls of this pit will be normal in character, except, perhaps, in cases where the direction of the rods is slightly changed. Thus is formed the pit described by Wedl and others, "an opening surrounded by enamel rods and the bottom clothed with enamel."

Acids, bacteria, etc., effect the walls of these pits after the tooth is erupted, causing forms figured by Wedl and Magitot, who describe them as filled with pigment, debris of tooth substances, food, leptothrix, etc. The destruction of rods forming the wall, make the pit into a pouch or cul-de-sac. This, it is said, is a form of arrested development, but can it be called so and be "dependent upon some constitutional disturbance," as Wedl, Magitot, Tomes, and others assert? We think not. It is a death or blight of a cell or cells forming the enamel rods, independent of systematic disturbance.

Fissures or grooves in the coronal surfaces of molars and bicuspids, are also accounted an arrest of development, a lack of coalescence, a failure on the part of the enamel plate, which in its development from the cusps towards the centre, fails to meet and coalesce. The defect is not due to a failure to coalesce, but is the result of a rupture of the enamel organ a separation of the ameloblastic layer, separating the rods.

At the period of development, when this rupture takes place, the pulp has assumed the form of the future tooth, but is smaller. Small caps of dentine are formed over the points of the cusps; the enamel organ has undergone the change noticeable in the form of the cells, and a change is taking place, from protoplasm to formed material, ready for the lime salts. This change renders the cells stiff and unyielding, and commences directly over the points of the cusps, passing gradually out from these points, as centres, towards the centre of the grinding surface, and down towards the sides of the crown. The growth of the dental bulb stretches the investing enamel organ, and the points over the cusps being fixed, the strain comes directly on the softest and most yielding portion midway between the cusps, where fissures are to be found. The strain upon the enamel sheet separates the ameloblasts, and breaks their continuity; this is not repaired, a fissure results. These fissures are most common on teeth with prominent cusps, as in these the enamel organ is most subject to rupture. These cracks or fissures, smooth walled before the eruption of the tooth, after eruption are discoloured and filled with debris and leptothrix. Under the microscope they have the appearance described by Wedl.

In the second class of cases of defective enamel, the non-congenital or accidental, many are due to the abnormal action of the so-called absorbent organ. When some of these defects occur the temporary teeth occupy their sockets in the alveoli; the permanent teeth are enclosed in the follicular wall, surrounded by a bony crypt, which with the roots of the temporary teeth, must be removed to allow them to assume their position in the arch. Tomes' absorbent organ effects this. Wedl calls these cells as *osteo*, *or odontoclasts*. The author thinks them granulation cells. This organ, is in close contact with the tissue about to be removed, whether bone or tooth. Cup-shaped excavations filled with this cellular organ are noticeable on the surfaces being acted upon. The absorbtion of the roots he thinks quite similar to pathological processes of absorbtion.

He regards the process as quite one with that by which granulation cells eat away tissues, *e.g.*, exfoliation.

It is noticeable that the roots of replanted teeth are frequently removed by an identical process. This removal by nature of the roots of a replanted tooth is, it is said, to be precisely what takes place in the disappearance of the first teeth.

How these granulation cells do their work is doubtful; "Absorptive and resorptive digestion is, according to Dr. Black, accomplished by a soluble ferment, elaborated by the tissues under special circumstances, for the removal of tissues no longer needed as roots of temporary teeth. It is brought about by the action of a class of cells which have become known as "osteo" or "odontoclasts." These are only the ordinary connective tissue cells of the part in immediate proximity with the part to be removed, which have temporarily taken on new functions—the secretion or elaboration of a soluble ferment for the removal of these roots of the temporary teeth which are no longer wanted. These cells perform this act in an indirect manner. It is plain that these roots are not removed by any mere mechanical force. These cells have no physical power of growing into them; they secret a soluble ferment, analogous to the body which digests them, breaks them down and fits their substance for entering into the blood streams by osmosis, just as solid ingesta in the stomach is broken down and *fitted* to enter the circulation by osmosis.

"There seems to be no foundation for the notion that the resorption of these roots may not form proper pabulum for the building up of other tissues; that the absorbed product is necessarily excreted. From accident or decay the temporary teeth often lose their pulps, which sometimes results in the formation of an alveolar abcess. If such an abcess exists at the time absorption should take place, absorption fails, partially or entirely; the tissue which performs this function being thrown into a pathological state or condition, the secretion of the soluble ferment does not take place in the usual manner.

"If, however, the abcess does not occur, or if such abcess be cured and the tissues in immediate proximity to the devitalized root be perfectly healthy, it is found that the absorption goes on in the usual manner. The mere death of the root does not interfere with the resorption, provided the physiological condition is maintained in the immediately surrounding cells, which are the active agents in the work. The soluble ferment does not depend for its action upon the life of the tissue to be acted upon. The roots are simply digested and enter the blood streams by osmosis, as any other digested material."

Honey-combed and furrowed teeth (incisors and six-year molars) closely resemble surfaces of hard tissue which have been acted upon by the absorbent organ; incisors, marked by horizontal ridges and furrows, are said to arise from constitutional defect, hence occurs an arrest of development in the epithelial structure—the furrows indicating a period of arrest, the ridges a period of development, hence a succession of disturbances equal in number to the markings on the teeth are supposed to have occurred. This can hardly be accepted as true. May not much of this marking be due to the action of the absorbent cells? Possibly, having removed the temporary teeth and the alveoli, they continue to act and remove the enamel cuticle and dissolve out the lime from the freshly amelified enamel rods.

The succession of furrows and grooves correspond it is said to a period of growth and a period of rest for the incoming tooth; the cells, acting upon the enamel when the tooth is at a period of rest, form a furrow or groove across the surface.

The sixth-year molar is acted upon in a similar manner by the organ lying over and in contact with the grinding surface. The surface has pits and cup-shaped excavations, reaching, at some points, the dentine beneath. Spines of perfect, unaffected enamel, the full depth of this tissue at this point, are frequently seen surrounded by these pits and excavations ; the change noticeable in color, and the rounding up of the otherwise sharply outlined borders of these excavations, is due to subsequent action. Erosion at the gingival border, is the result of this same action of the granulation cells.

Dr. Black is quoted in support of a theory that perversion of nutrition may liberate ferments which assist the process of absosption. The results of Underwood, Milles, and Dr. Miller, give what we should expect to find; if decay is produced by the organisms, it must be by the digestive fluid, soluble ferments thrown out by them, or their waste of products. When Dr. Koch was examining the gangrene, produced in mice by the coco-bacterium of hospital gangrene, he found uniformly that the tissues were destroyed in advance of the bacteria. The bacteria seemed not to touch the living tisssues at any time after the work was fairly begun, the tissues being destroyed in advance by the soluble ferment,"

CONGENITAL DEFORMITY OF THE TEETH.—The following curious "freak of nature" is reported from America: John M. Lee, eight years old, stout, robust, well-grown, has four teeth only. These are like tusks, two in the upper and two in the lower jaw. He has no sweat glands, and was never known to perspire in his life. From the diminutive size of his jaws and very small amount of alveolus, it is probable he will never have any more teeth. He has but a little hair, which is like white wool. He has to keep himself sponged all the time in hot weather. He has a bright intellect, and takes pleasure in school.

ENGINE BRUSH.—The following method presents advantages: Take your engine porte-polisher and insert in it all the bristles it will hold, then drive into the centre of the brush a hard wood wedge, which should be notched to break off even with the end of the porte. Cut the bristles, leaving them about a quarter of an inch in length. A few minutes previous to using the brush, place it in water to tighten the wedge. This brush is very useful in cleaning the teeth and finishing fillings.

Reflections from the Surgery.

RETARDED ERUPTION OF WISDOM TEETH WITH ACCOMPANYING FACIAL PARALYSIS.

Case in the Practice of J. S. Cave, L.D.S.I.

The following case offers many points of interest to dental surgeons, illustrating as it does the complications which occur in the eruption of the wisdom teeth.

Some few years ago a gentleman—a medical man—about 56 years of age, called upon me. His face was somewhat swollen on the left side, and he was only able to open his mouth to the extent of about half an inch. I was able, by aid of the mouth mirror to ascertain that he had never erupted a wisdom tooth; but the gum behind the second molar on the left side of the lower jaw showed evidence of a tooth not far below the surface; I guessed that this wisdom tooth was erupting in an oblique direction and pressing against the second molar, thus causing facial paralysis. As the mouth could not be opened sufficiently then to operate, I told the patient to poultice the face and return home. In two or three days, if he was able to open the mouth wider, he was to see me again. On the third day after, he returned to me, and was able to open the mouth to the extent of about an inch; I was then just able to operate; with a curved lancet I cut away the gum over the wisdom tooth, and with a pair of stump forceps extracted the tooth. The patient experienced immediate relief, and he has since, I believe, cut the remaining three wisdom teeth without any trouble.

British Journal of Dental Science.

LONDON, NOVEMBER 15, 1884.

THE BRITISH DENTAL ASSOCIATION AS REPRESENTATIVE OF THE DENTAL PROFESSION.

In a letter which appears in our correspondence column, Mr. Canton as Secretary of the Association strives to impugn our statement that the Association does not represent the profession.

The letter is written in the straightforward temperate spirit which is always so conspicuous in whatever Mr. Canton undertakes. We publish the letter very willingly but confess that we fear its sentences will fail to bring conviction to the mind of the average Briton, unless he is suffering from an aggravated form of Association fever. As an amusing counterblast we may mention a singularly feeble effort, which appears in a contemporary, entitled "A Word with Grumblers." This precious piece of special pleading performs a discordant pœan over the late Edinburgh Meeting and the Association in general. The gentleman who has immortalised himself by this letter subversive of the carking band of grumblers, hugs himself and his dearly loved Association upon his and their felicitous condition and spins a somewhat tinsel web of adulation wherewith to clothe the "*self* and partner."

If Z. does not wax eloquent it is clearly the fault of his birth not of his enthusiasm.

"Was ever the world being so well educated in the knowledge that there exists a dental profession, in contra-distinction to the horde of charlatans—now rapidly being reduced in number—who formerly with impunity adopted its titles and deceived the public." Although it is not clear whether the dental profession or the horde of charlatans is rapidly being reduced in number, yet we concede the benefit of the doubt.

Z's pœan again awakes the welkin, "Is not our Journal a credit to us and a power? Do the grumblers recollect that this admirable periodical, beyond doubt (!) the best dental paper ever published—I mean in editorial tone and style—is edited and conducted by members of the Association who receive neither fee nor reward for their labours." And so on and so on. This is really most gratifying Z, but is it quite all you say, facts are stubborn things, and we fear Z's zeal has dimmed his perception. We have only lingered upon this grotesque literary rhodomontade to exemplify what harm comes from ignorant and *ex parte* eulogy. So long as Z's stupid Phariseeism exists among the class he represents, one we fear less insignificant in numbers than in wit, it will be hopeless for rational criticism and much-needed reform to take place.

A man who persists that his amaurotic vision resembles the truth in spite of his friends, is hopeless, at least in sublunary affairs. It is refreshing to revert to the earnest and decorous sentences of the Secretary of the Association, which if unsatisfactory in fact, lack all fire-eating swash-buckler tendency.

It is said that the Association has upon its muster roll "about 350 qualified men and the remainder about 250 are unqualified. This shows that we welcome the reputable practitioners to our ranks." This is a startling statement, and is, we opine, self-contradiction. If the Association has 250 *unqualified* practitioners in their ranks they welcome *disreputable* practitioners! What we presume is meant is, that 350 hold a dental diploma, that is 350 out of possible 801, and 250 practice without having passed through any examinational ordeal, and of these there are over 4000. So that out of a possible five thousand and odd, the Association numbers 500. In conclusion we are told "That we do represent the most active part of the profession, is a position which I think can hardly be denied us."

This conclusion obviously begs the whole question; it is the old fallacy of *petitio principii* offered with naive assurance. As we pointed out, that the Association had and perhaps we might say has, the chance of affiliating every reputable dentist either as a member or a non-associating supporter. At the same time no such confidence will be imposed by the profession at large so long as the Association is manifestly guided and controlled by an executive whose besetting vice is clicquism.

There is another aspect which reveals an apparent "dominating idea" that all who are not for the Association are against it. Unlike its medical prototype, it fails to ingratiate itself and its objects with non-associates. Were one to accept some of the names upon the Representative Board as earnest of the breadth and justness of its doings with its neighbours one would be reckoning egregiously without one's host.

As we took occasion in a former article to point out, there is fear that when narrow men with biassed minds supplant the less impetuous "fathers of the land," the gap which still yawns so widely betwixt the Association and the general run of the profession must inevitably gape even more. Other points are raised by Mr. Canton's letter, which we must reserve for the present. In the interim we cannot do better than express our hearty well wishes to the Association and that reforms may not long be wanting to consolidate and extend the field of its influence.

THE ENGLISH LANGUAGE V. THE AMERICAN. — An American contemporary, deviating from its professed lines—the teeth and all about them—takes up the cudgels in favour of good composition. There is much loose and slovenly writing, and our contemporary thinks that we English are as much to blame as are his countrymen. There *is* much slovenly writing, and dentists both here and abroad are fond of indulging in the luxury of murdering the Queen's English. But it is a dangerous matter to place lance in rest, and ride a tilt against another man's English. He who is hypercritical must be so very accurate or he becomes so very ridiculous. Who does not remember that Church dignitary who wrote a *brochure* defending his liege Lady's English, evoked that clever *Tu quoque*, yclept "The Dean's English." Even his reverence's phrases needed the pruning hook, and his words the refining aid of Johnson. Mr. Charles Tomes forms the theme of the lesson in English composition, with which our contemporary has favoured the American public; and we are invited to a feast of the garbled remains of Mr. Tomes' sentences, amended—save the mark!—by the sententious commentator. This is all fair enough if care had been taken to select really faulty sentences, such sentences as all busy men must write, alas, only too frequently; but in many of the cases before us we must admit that Mr. Tomes' English strikes us as being far better than his censor's. But although in the particular instance selected we fail to see any cause for quibble, yet one recognises that as a general charge against dentists our friend files a "true bill." In a suggestive paper which appeared in our pages some time back, it was urged that the "beautiful side of life" was neglected. In the everyday mill men get roughened, and the minds coarsened. To be in contact with pitch defiles, to be in the vicinity of the beautiful, whether in art or nature, elevates. Men who write accurately must be accurate thinkers, and must further have acquired the mechanical art of arranging words in sentences. To acquire this men must read. It is unfortunate that busy men neglect the old-fashioned "humanities;" their pursuit makes men better thinkers, plainer writers, and certainly pleasanter companions socially. The social developments of dentistry are little understood, little practised save by a few. We commend this side of the profession to our readers.

The American Dental Journals are all full of the action by the Richmond Crown Company to defend their patents.

Salivary Calculus Removed from a Patient.—Dr. J. J. Chisholm reports the following case in the *Journal of American Medical Association*:—Mr. W., aged 73, consulted me for a glaucomatous trouble. During the consultation, he desired to know whether his defect of vision could be aggravated by a disease of long standing in the mouth. In inspecting this cavity I found a large swelling under the tongue, on the right side of the frænum. It was a prominent elevation on the floor of the buccal cavity, extending from the inner face of the chin towards the root of the tongue. Its nature was apparent at a glance, for at the anterior and upper part of this large, round, fleshy mass was an opening one-fourth of an inch in diameter, through which could be seen the exposed surface of salivary calculus. A probe passed in through this opening entered into a large cyst, the thickened and distended duct of Wharton, which was filled with a solid calcareous mass. With a scissors I slit up the cyst wall, and removed from its bed a very large calculous of brownish white colour, which weighed, when thoroughly dried, 159 grains. It was pear-shaped, the stem or contracted part having been moulded in the less dilated part of the salivary duct. The calculus was 1⅜ inches long, ¾ of an inch broad at its largest end, and ⅜ of an inch near its most contracted end.

A thread passed around the stone in its longest diameter measures 3⅜ inches. The circumference at the thickest part was 2¼ inches, and 1¼ inches around its most contracted portion or stem. The surface of the stone was rough. It could be easily cut with a knife, the section showing a laminated structure. A drop of acid upon the surface caused carbonic acid to bubble up, showing that carbonate of lime entered into its composition. Chemical analyses showed that phosphate of lime was the chief constituent. The tumour had annoyed the patient for a long time. Its peculiar nature was not suspected till revealed by ulceration of the sac.

FORMULA FOR DISGUISING ODOUR OF IODOFORM.—An American writer recommends the following recipe:

℞	Iodoform	gr. $\frac{1}{25}$.
	Camphor	ʒ$\frac{1}{4}$.
	Alcohol	℥1.

Dissolve the camphor in alcohol and then add the iodoform. Add filings of celluloid, which will dissolve up in 6 hours, and "you will have one of the best materials to apply to an exposed pulp before capping with oxyphosphate. It answers well, also for stopping apical foramina.

STICKING WAX.—Dr. C. R. Bulter, writing in "Archives of Dentistry," gives this formula:

℞	Gum damar	℥vij.
	Bleached beeswax	℥jv.
	Canada balsam	ʒj.

While operating, if you happen to knock a hole in the rubber dam, raise it up and stick a piece of paper over the hole with the wax. Where it is impracticable to apply a clamp, push the dam well up against the gum, dry the tooth, warm and apply a small piece of the wax against the tooth and dam. This wax will be found useful also in adjusting gold and porcelain crowns, attaching single teeth to trial plates, etc., especially in warm weather.

FLUX.—Cut into small pieces half a pound of sheet zinc, and place in an earthen jar, then pour one pound of muriatic acid, let it boil half an hour, then add half an ounce of muriate of ammonia, quarter of an ounce of borax; when that is dissolved, add half a pound of rain water, and strain. This solder may be used by melting with the blow-pipe, a soldering iron or an alcohol lamp.

RUBBER WORK.—Mr. Bright commenting upon rubber work, contributes in the *Dental Register* the following hints. He says: "I have recently made a discovery in working rubber that, I think, will be of great service to those who use rubber. Every one is familiar with the fact that in vulcanising thick rubber it often becomes spongy, and is really spoiled, and no certain way has, as yet been devised to obviate it. I have adopted a plan that completely overcomes the difficulty, and makes any thickness that may be needed for the restoration of features, or anything of the kind. The method of accomplishing this is to take strips of vulcanised rubber of proper size, and thoroughly roughened with a rough file, or drill holes as in the preparation of a broken plate. Pack in these, in proper position, as many as the space will conveniently hold, so as to be entirely covered by the soft rubber, then vulcanise as usual. This will make strong solid work, and without a possibility of sponginess.

THE "NEW ENGLAND JOURNAL OF DENTAL SCIENCE."—This paper, familiar to our readers by our "Abstracts," is, we are informed about to lose its identity. The publishers and editors have concluded that their coalescence with the *Archives of Dentistry*, now in the hands of the Dental Journal Association, would prove most conducive to the well-being of the Journal and their profession.

STOPPING TEETH AT GENERAL HOSPITALS.—In the pages of our contemporary, the *Lancet*, Mr. Fitzroy Benham ventilates the grievance that tooth stopping is not taught or practised at general hospitals. He very rightly says, "healthy young persons of poor circumstances are forced to sacrifice their teeth," because the general hospitals provide no adequate means whereby efficient stopping can be carried out. The only cure is in nine cases out of ten, *extraction.*—a remedy about as severe as amputation of the leg would prove in treating gout in the toe. We have ourselves pointed out this evil over and over again. Nor have we stopped here; the schools, workhouses, and prisons are equally unprovided for and equally in need of the adequate supervision and care of a competent dentist.

MR. BENHAM is answered by Mr. Sewill and Mr. Hutchinson. Mr. Sewill advocates the appointment of several assistant dental surgeons, who are to be aided by a *corps* of dental dressers. As a further innovation it is proposed that those patients who can afford to pay should do so. Such small fees would be, Mr. Sewill opines, very welcome to young struggling practitioners. It is not, however, clear in in Mr. Sewill's sentences whether he suggests that the pay-patients should be treated at the hospital, or sent to the young struggling practitioner. To us it would be a fatal mistake ever to take "pay" dental patients. It would be manifestly unfair and react very injuriously upon those dentists who have no dental appointment at a dental or general hospital.

Writing upon the same subject Mr. Hutchinson believes general hospitals cannot undertake the work, and he seems to indicate that the Leicester Square Institution and the National should have all stoppings et cœt sent on to them.

Annual Dinner in Connection with the National Dental Hospital.—The annual dinner of past and present students is announced for Nov. 28th at the Holborn Restaurant, Mr. Felix Weiss is to take the chair.

New Dental Institute in Berlin.—A new dental institute established by the exertions of the Minister of Education, Herr Von Gorsler, was opened on October 15th. Professor Dr. F. Busch has been appointed director, and he will be assisted by Messrs. Paetsel, Müller, and Sauer, as instructors in theoretical and practical dentistry. The want of such a central institute has been felt. Hitherto, a large number of German students in dentistry have been obliged to seek their instruction abroad. The lectures for the ensuing term are on the following subjects: 1, practical surgery; 2, diseases of the teeth and mouth; 3, theory of tooth-stopping; 4, normal and pathological history of the teeth; 5, theoretical introduction to mechinical dentistry. The following practical courses are announced: 1, policlinics of diseases of the teeth and mouth, including the extraction of teeth; 2, operative dentistry, chiefly stopping decayed teeth; 3, mechanical dentistry, the supply of false teeth. For the general training of dental students in anatomy, physiology, physics, chemistry, and in the branches of practical medicine, there is plenty of opportunity by attending the lectures of the professors at the university.

Abstracts of British & Foreign Journals.

CENTRALBLATT FÜR ZAHNHEILKUNDE.

DISTURBANCES IN THE DEVELOPMENT OF CHILDRENS TEETH.

By Michael Morquextean, Dentist.

Were irregularities such as we are speaking of found only in isolated cases, they might be supposed to arise merely from some local cause, but their preponderance among civilized people in comparison to uncivilized makes them a subject of graver importance.

There is said to exist between the growth of the cranium or the masticatory organs through the law of correlation, a conditional reciprocal relation. It happens sometimes that the functions of the brain are forced into premature development, and such development is detrimental to other neighbouring organs which under normal circumstances would be exempt from consequent evils. The functions of the masticatory organs are amongst civilized people reduced to a minimum by the use of artificial means of mastication, and by the reduction in size of food by mechanical or chemical means. Under such circumstances arises an increased necessity of nourishment for the brain and this need is supplied by the superfluous nourishing material found in the masticatory organs from which it can be withdrawn. Through this withdrawal, the means of nourishment are diminished and can only be compensated for by the masticatory organs suiting themselves to their new circumstances. Such a changing process can only be accomplished at certain times and in thousands of generations.

Irregularities arising in single cases are conditional to the differences in the consistence and the circumstances of the growth of the jaws and teeth.

The bony substratum in which the teeth are developed is greatly diminished in the mass and the teeth likewise. These have in consequence of their position, not sufficient space and become pressed out of their normal place. Thus such irregularities may be considered as one of the common laws of development which precede the appearance of the teeth, and that a gradual accommodation of the teeth to their circumstances takes place is shown by the fact that in some cases the size and number of the teeth is diminished. In many cases the wisdom teeth are imperfect in their development and sometimes do not appear at all.

The period of cutting milk teeth varies even under normal circumstances. Children have been known to come into the world with the central incisor already through, while on the other hand, others at eighteen months are still toothless. Though children in a healthy and normal condition often cut their teeth late yet they are found specially to do so under the influence of Rachitis. Under such circumstances, Rittens Von Rittersheim says, the teeth must not be expected until the twelfth or even eighteenth month. According to Bequiski, cutting the teeth in such cases takes place at least three months later than the usual time and is often not finished at the third year.

In cases of Raochitis also the succession in cutting varies from the general rule, that is to say, that teeth often appear at an early period which properly belong to a later group and vice versa. The many and common irregularities in the cutting of permanent teeth are generally attributable to some irregularity in the development of the jaw or merely mechanical causes, but in some cases there seems to be no explanation for them. Through the distribution of the teeth in *Dentes lactei* and through the conception of a first and second dentition, the milk and permanent teeth are considered as totally distinct and dissimilar. The cutting of teeth according to Trousseau when once begun goes on uninterruptedly until completion, although some periods of rest intervene. This view was taken up by Baume in his odontological researches, and endeavours to found it upon ontogenetic as well as philogenetic opinions.

He calls the so-called second dentition of mammals a *Scheindiphyodontismus.* The germ of the teeth does not, according to him, spring from the neck of the enamel organ of the milk teeth, but is developed quite independently out of the remains of the primitive enamel organ.

This opinion, though in direct opposition to all recognized results of other researches, gains in probability through the analogy of comparative anatomy.

Milk teeth are occasionally found in the jaws of adults standing firm among the permanent teeth, and sometimes when a permanent tooth is missing, its absence will remain unnoticed, as there is no hole to indicate it. Thus an experienced practitioner would not think of removing a milk tooth when so discovered merely because it is not a permanent tooth, nor would he remove a permanent tooth to create a space in the jaw for those teeth still expected. Both cases are abnormal. Now and again there are cases in which after the removal of a milk tooth the hole never fills up, and those in which a dislocated permanent tooth will appear close to a firmly set milk tooth. Such cases may be caused by a therapeutic mistake. If in the first case the hole was caused by the extraction of a milk tooth, no sign of a permanent tooth having been visible, doubtless the germ of the permanent tooth was removed in the extraction of the milk tooth, that germ being surrounded as is usual, by the resorbed roots. In the second case a dislocation of the permanent tooth was probably caused be neglecting to remove the milk tooth at the right time. These four cases are typical. The first three prove that independent of milk teeth, irregularities often occur, and the last case seems to lead to the same conclusion. The following case will serve as a foundation for this opinion. Dr. Morquexteau was consulted by a man about 35 years of age, about a tooth fang which pushed its way up between the canine tooth and the first bicuspid, loosening the former. This was, as it soon appeared, an upper milk molar, and the tooth which had loosened it was its permanent tooth, which showed a horizontal position back and front. The space between the small incisor and the bicuspids was in this case sufficiently wide for both teeth. The question arose as to whether the milk tooth's removing had caused the anomalous position of the normal tooth. Under normal circumstances, a resorption of the milk tooth root, owing to the influence of the permanent canine tooth would have taken place twenty years before in consequence of which the *deus lacteus* would have been gradually loosened. Under these circumstances the tooth would have been thrust out in the usual manner, but that resorption in this case should follow proves that the original relation of both teeth was not normal. The blame may not however entirely rest with the milk tooth, for it is conceivable that the tooth did not become loosened at the time the permanent tooth first appeared, but may have become loosened in the normal manner long before, the roots being absorbed. Submitting to this view, it can hardly be supposed that a rootless milk tooth crown could have compelled a tooth, already lying in a horizontal position in the depths of the jaw, into the position described in the alveolus, and still more difficult is it to conceive how an invisible toothless crown could have brought so important a tooth into a horizontal position. In these given cases a predisposition is supposed to exist towards such irregularities outside the teeth, but there are other numerous cases in which the teeth are exclusively answerable for, such as the premature loss or removal of a milk tooth which causes later dislocations, retention, and of abnormal cutting of permanent teeth. Thus intermaxillary changes ensue upon the premature extraction of a milk tooth, causing a disturbance of the normal succession of the cutting period. From this disturbance spring many new irregularities. Dislocations and anomalous positions of permanent teeth may often arise from diseased alveolus or jaw, conditions brought about through periostitic milk teeth. Necrosis of the alveolus is as often and as easily caused by periodontitis of the milk teeth as by that of the permanent, and is often the cause of the greatest disfigurement.

DISTURBANCES IN DEVELOPMENT OF CHILDREN'S TEETH AND THEIR TREATMENT, M. Morgenstern.

The numerous cases of deformed jaws, dislocation and irregularly developed teeth, which are considered as ordinary conditions of illness, sometimes plainly indicate the cause of such irregularities to be some disturbance in the means of nourishing the material in which the teeth are developed. This opinion receives great support in the fact of hereditary and early developed dyscrasia, particularly scrofula and rachitis being in almost every instance attended with some such irregularity of the teeth or malformation of the jaw. Nevertheless we must not jump to the conclusion that every such irregularity is caused by dyscrasia. These disturbances in the hard substance of the tooth are usually evidenced by irregularities in form and structure, but in most cases where no more prominent symptoms appear outwardly than a certain transparent coloured spotted appearance on the upper surface of the enamel worn through by erosion, which occurs in milk and permanent teeth.

In most cases the effected part of the tooth is separated from the sound part by a sharp boundary line which may even become a border. The distance of this boundary line from the extremity of the tooth taken in connection with our theoretical knowledge of the time of development of the tooth in question puts us in a position to form some opinion as to the time at which such irregularities arise from general disturbances in nourishment. The typical tooth formation as a symptom of dyscrasia (syphilis and rachitis), as exhibited by Hutchinson and Sydenham is too uncertain to be of any value. In consequence of its excessive weakness and flexibility the jaw developed under a general disturbance of nutrition falls under the influence of the muscle, and deformity of the body of the jaw, from muscular pressure ensues. At the same time deformity of the alveolus and a rami of the jaw occurs by which an asymmetrical development of the halves of the jaw, an inward bending of the alveolus and a crowding of the tooth is brought about. Fleischman dwells upon the flattening and polygonal transformation of the under jaw, the rolling inward of the edges of the alveolus and the lengthening of the upper jaw which happens in rachitis in consequence of the masseters and of those of *mylo-hyoidei* and of the muscles of the tongue. As long as the milk teeth remain the deformity of the alveolar arch is seldom met with, it generally occurs later. It appears that the least resisting bone receives support from these milk and permanent teeth which groove it, and may thus escape on some grave deformity from which otherwise it might have suffered. With the loss of the milk teeth and sometimes in cutting permanent teeth a disturbance of the intimate dental connexion between the teeth and the jaw takes place through which deformities come about, the intensity of which is in proportion to the strength and firmness of the bone. The same thing can under the influence of rachitis causing the two sides of the under jaw to be asymmetrical, this Baginsky is of opinion is caused by a disproportion of the opposition and resorption process on both sides of the bone.

II.—The treatment of irregularities is indicated by dietetic, phonetic and cosmetic considerations. It is divided into the treatment of milk teeth and permanent teeth. The first has in relation to the last a purely prophylactic worth; the more fundamentally and rationally it is accomplished, so much the more probable is the hope that even by hereditary anomaly the position of the permanent teeth will preceed the cutting of the latter in the normal way.

In the prophylactic treatment, the following points are to considered: The age of the child, the condition of the milk teeth and the number and position of the already existing permanent teeth. The cutting of the permanent teeth does not always take place at a given time, nevertheless, a common accord may be observed in the succession of the cutting teeth. Out of this knowledge and from the time of the cutting of any permanent tooth—or if this has not yet ensued—from the age of the child an approximately accurate conclusion may be drawn as to the duration of time any milk tooth has existed. This conclusion will assist in the manner of treatment.

Let it be decided beforehand that a tolerably firm milk tooth has to wait at least a year for the cutting of the permanent tooth, then it should be preserved. Even teeth with exposed pulp after the previous rational treatment must with this aim be stopped if only provisionally, but it is not advisable to fill permanent teeth with the same stopping as the root canals. This should never be done with milk teeth, because the resorptive process of the milk tooth roots can be disturbed through their stopping. Rather should one endeavour to preserve the pulp and overcap it, for which iodine paste is a very good preservative.

In inflammation of the root membrane it must be ascertained gangrene of the pulp exists; in this case, and if the periodontitis has become suppurative one has resource to extraction, but in all other cases the healing of the diseased tooth must be after, after which it must be provisionally stopped. A tooth loosened exclusively through the resorption of its roots should be removed, if the cutting of the permanent tooth is expected in a shorter time than a year. If permanent teeth have already broken through, showing abnormal positions and directions it must be seen whether they will not in time gradually get into their normal position through tongue, lip, and cheek pressure or through the pressure of the opposite and neighbouring teeth. If this favourable event does not happen, and if the succeeding permanent teeth do not exercise a correcting influence on the anomaly the assistance of the dentist should be sought. There are hardly any common points which may be treated therapeutically, for almost every case has peculiarities and must be treated individually.

Considerable anomalies of position are caused through the growth of the jaw being retarded, in such cases a widening of the alveola arch should be sought for. Extracting single teeth would be superfluous. Amongst the countless dental preparations the following are to be praised for the simplicity of their handling and intense influence: A caoutchouc band which fits exactly the inner side of the alveola arch, which is to be dilated, consists of two halves bound together with bent pianoforte wires. In from two to five days this preparation is taken out of the mouth of the patient and the wire somewhat drawn, whereby the band produces a stronger pressure, the arch of the alveola is in this way dilated till the desired extension is attained.

After this effect an individual caoutchouc band is prepared for the changed alveola arch, and put against the new extension by means of its fixing. From this band the dislocated teeth are by rational means brought through.

The prognosis of any irregularlities which have occurred is favourable, if the case comes under treatment before the sixteenth year of the patient. It scarcely needs the confession that I am nware in this sketchy delineation of irregularities and their treatment of having given no uninterrupted account disease; still I hope through the statement of the characteristics of this matter to have acquainted the reader with its principal features.

Oxyphosphate of Zinc.—Dr. Taygart is said to prepare his oxyphosphate of zinc after the following method: Glace—phosphorous acid is dissolved in a considerable excess of water, and by careful application of heat evaporated to a syrup consistency. For powder, pure zinc oxide is brought to a white heat and so maintained for two hours.

Literary Notices and Selections.

DEATH FROM CHLOROFORM, ACCOMPANIED WITH UNUSUAL SYMPTOMS, by A. ERNEST MAYLARD, B.S., Lond.

Extra-Dispensary Surgeon to the Western Infirmary, Glasgow.

D.M., aged 26, was admitted into the Western Infirmary, under the charge of Dr. Patterson, on 24th June, 1884, suffering from injuries to his legs, produced by the fall of a metal plate. On examination he was found to have a simple comminuted fracture of the left femur a little below the centre of the bone, and a similar comminuted fracture near the right knee joint, involving both femur and tibia, with considerable displacement of parts. The patient, who was a strong, well-made man, presented no marked collapsed condition, notwithstanding the extensive injury received. The limbs were placed in position, and on the following morning chloroform was administered to allow of certain re-adjustments of the parts. The anæsthetic was given in the usual way, with a folded towel, and the patient went quietly under its influence with nothing abnormal to attact attention. On removal of the splints about the middle of August the fractures were found firmly united, and at the end of the month the patient was allowed to get up daily for a short time. He continued in the same way during the month of September, being unable to walk or use his limbs from stiffness of the joints.

Being in charge of the wards, in the absence of Dr. Patterson, I arranged that on 1st October we would give the man chloroform, and forcibly move his stiffened joints. At the appointed time the house surgeon and myself proceeded to give the anæsthetic. The patient showed not the least sign of nervousness, actively put himself into position for administration, and commenced inhaling by several rapid shallow inspirations, as if determined to get quickly under the influence of the drug. Following immediately upon the shallow movements were three or four very deep inspirations. Feeling that this method of inhaling must have entailed a large and rapid consumption of chloroform, I told the house surgeon to remove the cloth, when the patient, though still breathing, was seen to have his eyes wide open, pupils extremely dilated, or rather rapidly dilating, and conjunctive insensible. The face was neither livid nor pale; the lips, indeed, were of their normal pink hue, and the cheeks slightly flushed; in fact, besides the condition of the eyes, there was nothing in the facial aspect to excite alarm. Up to this point the time from commencement of inhalation could not have exceeded one to two minutes. On feeling the right radial no pulse could be detected; this was confirmed by a student on the opposite side, who had hold of the left wrist. The pillow beneath the patient's head was at once removed and the head lowered. Respiration then ceased, not, however, until three or four breaths had been drawn after the recognised cessation of the pulse. The tongue was immediately withdrawn by the artery forceps and artificial respiration commenced. The case being one of undoubted primary cardiac failure, measures were taken to stimulate the heart. The bed was raised to a considerable height at the foot; a subcutaneous injection of ether given (20 min.) and galvanism applied. This latter, not being on the spot, some ten or fifteen minutes must have elapsed before it was brought into use. After artificial respiration (Sylvester's method) had been continued for, I should judge, about a minute or two, the patient took a deep inspiration. This, with varying intervals, was followed by three or four more, but the acts were much more suggestive of the final "gasps" of a dying man, than of the gradual return of normal respiration. The pupil slightly contracted, but again dilated, to remain permanently so. Although there was this indication of some activity in the respiratory system, there was no indication of any return of cardiac contraction. After the final "gasp" the face began to assume the appearance of *post-mortem* lividity, the cornea lost its lustre, and all signs of life seemed extinct. Artificial respiration was, however, kept up for half an hour, but no indication whatever of returning life manifested itself, and there seems little doubt that our patient must have been dead from the moment the heart definitely ceased, and that only about two minutes after the commencement of administration of the anæsthetic.

REMARKS—Reviewing the case as the symptoms presented themselves, the rapidity of respiration with which the patient commenced inhaling is by no means an uncommon method of taking the ænesthetic. The patient is told to "breathe away," when he at once begins—to use a rather vulgar though apt simile—pumping like a steam engine, and as a result passes into a condition of apnœa manifested by cessation of respiratory efforts. The blood being then hyperoxydized, there is no need to respire, and the patient accordingly holds his breath. So frequently is this seen, that when our patient commenced breathing in this way, I casually remarked to the house surgeon that the man would soon hold his breath, having induced a condition of apnœa. Instead, however, of doing this, he commenced quite suddenly taking deep and rapid inspirations, and standing in such a position as to be able to see beneath the towel I noticed his eyes wide open. These two abnormal sequences—open eyes and deep aspirations following upon the rapid shallow breaths—induced me at once to tell the house surgeon to remove the towel. I would here parenthetically state, so as to be perfectly explicit, that the respiratory movements were not merely thoracic or abdominal upheavings, but air rushing—as best expresses it—audibly through the larynx and mouth. The face presented the appearance already stated. There was neither the lividity of obstructed respiration nor the pallor of cardiac failure. The condition of the eyes alone suggested some radical derangement, and induced me to examine the pulse, which I had not previously watched, nor directed any one else to watch.

Although my object in fully reporting this case is not specially to exculpate myself from any possible precautions left untaken or methods of treatment unapplyed, still I frankly confess myself reasonably exposed to three accusations. First—for not removing the anæsthetic when the patient commenced breathing in a manner which may rightly be described as abnormal respiration; second—for not watching the pupils; third—for not attending to the pulse. Concerning the first I must say, that in doing what I did I was pursuing a course usually adopted in similar cases. So constantly, indeed, have I seen the anæsthetic continuously applied during this condition without untoward symptoms, that one has grown to look upon it as a useful adjunct towards producing rapid anæsthesia. The ensuing condition of apnœa is always protective against the otherwise too great and concentrated absorption of the anæsthetic; and notwithstanding the often fortunately futile endeavours of the administrator to make the patient go on breathing, he still resists long enough to allow the drug to diffuse itself and the blood to regain its comparatively normal condition before any further introduction of the anæsthetic. Had our patient been deprived of the chloroform when first he commenced the abnormal respiration, I think it within the bounds of extreme probability the fatal result might have been averted; but precedent was in our favour, and alas ! we continued. I know of no case where death has occurred in precisely the same way as in the above; had I, I should have acted otherwise—and should this possibly be the first, it has taught me a lesson, and I should venture to hope my confession may not be without its beneficial effect in the practice of others. While I believe it is not unlikely other causes subsisted which may have materially conduced to the fatal end, the amount of the drug, which must have been absorbed during the rapid inspirations both shallow and deep, formed by far the most cogent agent in effecting the issue.

Concerning the other two points—watching the pupil and attention to the pulse—much is to be said, I shall, *imprimis*, receive the accord of my compeers, both old and young, in the general assertion that lack of experience in our own practice should induce us to follow the dictates of those to whom opportunities are specially afforded, and whose professional positions is a sufficient guarantee of reliance. Although I can number my personal administrations of chloroform by hundreds, I cannot do so by thousands, and what experience may be gained by the former is in its effects greatly augmented if in accordance with, or materially lessened if adverse to, the experience derived from the latter. For the teaching of Sir Joseph Lister I have the profoundest respect, and to find in his admirable article on aæsthetics, in Holme's *System of Surgery*, facts coinciding with my own comparatively humble experience is, I venture to think, a sufficient justification for any method of diagnosis or line of treatment. Throughout this artiele the author deprecates any special attention being attached either to the pulse or the pupil. The impression one derives from reading the subject is that paramount important must be attached to the respiration, while observation of either pulse or pupil may be almost entirely discarded. This my own comparatively short experience had supported, but now supports no longer, The very two conditions which in this case would have intimated that something was wrong were ignored, and what might possibly have indicated at an early stage preventive measures, existed later as simply passive fatal symptoms. So absolutely manifest here was the cessation of the pulse, and the dilatation of the pupil previous to the stopping of respiration, that on the strength of only this single case one feels fully justified in forcibly refuting the drift of Sir Joseph Lister's teaching; and asserting rather that attention should be equally distributed upon pulse, pupil, and respiration. It must, however, be said that in those cases where death occurs at an early period of the administration from primary cardiac failure, the heart stops suddenly without any premonitory indication of increasing feebleness of the pulse, and life from that moment is irrecoverably gone. Still, this is not the least argument against the advantage likely to accrue from carefully watching the pulse from the outset. To ascertain the immediate stoppage of the heart is to allow of active measures being at once taken, perhaps at the only period when it is possible to recover cardiac contraction.

(*To be concluded*).

Replanting a Tooth, by J. S. N. Snow.

Miss S.—Filled left superior cuspid in January, 1877; posterior approximal surface, large gold filling, not unusually sensitive. In May, 1883, she called to see me with face much swollen, asking what I could do for her tooth. On examination I found that the nerve was dead, and abscess had formed; removed filling to treat abscess. Opened into the nerve canal and extracted the remains of the pulp, but little flow of pus at the time through the tooth. I drilled with very small drill through the foramen, as I supposed; dismissed the patient, with request to call in two days. Early the second day she came, and I found there was no abatement of the swelling, and no discharge of pus through the tooth. I probed, and found the opening drilled two days before clear, but no pus in it. I came to the conclusion at once that I had not reached the seat of trouble, and that I had drilled through the side of the root instead of through the point, and that the root was sharply curved. I stated my convictions to the patient, and told her it was a desperate case and needed severe remedy—proposed to extract the tooth and replace it, expressing full confidence in the success of the operation. She consented. I administered a little chloroform, extracted the tooth and found it just as I had stated to her—the root was sharply curved about one fourth of its length from the point, and the drill had gone out at this curve. I cut off the sac from the point of the root, slightly enlarged the foramen, rinsed the nerve cavity with warm water, closed the foramen with gold, also the opening drilled through the side of the tooth, dried the nerve cavity, and filled about one half of it with gold rolled into a long carrot-shape point. I then syringed the socket with warm water, put a little carbolic acid on the point of the tooth, grasped it in a pair of forceps and replaced it in the socket, into which it went with a snap, some force having to be used in replacing it. It was retained quite firmly, and did not require ligating to keep it in place. In ten days it was entirely well and firm. I then filled the remaining part of the nerve canal and cavity in the crown, dismissed the patient, with request to call at once if any soreness about the tooth commenced. In about fifty hours she called—a little swelling being found over the root. This I scarified, and directed her to apply tincture of iodine to it, since which time I have heard no complaint from the case, and in fact have been assured that it is doing well.—*Southern Dental Journal.*

Dental News.

ODONTOLOGICAL SOCIETY, MELBOURNE.

QUARTERLY MEETING HELD AT THE ATHENÆUM, SEPT. 4TH.

MR. CUMMING, President in the chair.

Three new members were elected.

MR. TOWNSEND presented a collection of skulls to the Museum of the Society.

The PRESIDENT showed several molars, 2 inferior molars with 3 roots and 1 with 4; also some cases of exostosis, to be added to the Museum.

MR. MACGREGOR had a superior incisor which was difficult to extract owing to exostosis, also a supernumerary resembling a small molar, removed from the incisor region.

MR. THOMSON read a paper on "Irregularities of Dentition." The development of the maxillæ was traced, and the causes of the various irregularities shown. The relative advantages of the various mechanical and surgical treatments were discussed, and the importance of dealing with these cases in the earlier stages. At the conclusion there was an animated discussion.

PROSECUTION UNDER THE DENTIST ACT.

THE case of Macleod *v.* Robertson was heard at the Sheriffs Summary Court, Edinburgh, on the 25th ult. The information laid by Mr. Macleod, acting on behalf of the British Dental Association, charged the defendant, William Robertson, with having contravened the Dentists Act, 1878, in that he, not being a person registered under that Act, had in January of the present year issued a circular in which his name appeared with an addition or description implying that he was registered under the said Dentist Act, or was a person specially qualified to practise dentistry; and also by having attached to the railings in front of his house a brass plate with W. Robertson, *Dentist*, thereon; and further that in advertisements inserted in the *Edinburgh Evening News* he, not being registered under the act, had unlawfully used an addition to his name implying that he was registered under the act, and that he was a person specially qualified to practise dentistry; by which he had rendered himself liable to a fine of twenty pounds, or to be imprisoned for three months.

On the case being called on, the defendant pleaded guilty, and then went on to make a long statement, in which he asserted that the proceedings against him were due to the jealousy of the Edingburgh dentists, which had been excited by his wonderfull skill and success.

Mr. R. U. Strachan, who appeared on behalf of the association, explained that the prosecution was not due to any personal animus on the part of Mr. Macleod, who was only the nominal prosecutor, but was taken up on public grounds, the Dentists Act having been passed for the protection of the public as well as of the dental profession, and pointed out that dental schools had been established at great expense, that the students who attended them paid a considerable sum of money for their instruction and for their diplomas before they were entitled to practise, and that it was most unjust to them that they should have competing against them such men as the defendant, who had probably never gone through any proper course of study, and who had obtained no guarantee of their competence.

The defendant having, through his counsel, Mr. McDonald, given an undertaking that he would not continue his illegal practices, the sheriff fined him the mitigated penalty of £5, the alternative being seven days imprisonment.

Correspondence.

To the Editor of the "British Journal of Dental Science."

Sir,—Can any of your readers tell me how Sulivan's Cement is made? I have dissolved sulphate of copper, assisted with galvanism, by placing a piece of zinc in the liquid, after drying the powder I rub and rub in a mortar, but all to no purpose. They will not amalgamate. What is the reason? at one time I could do it easily.

Yours obediently,

Alpha.

1, Castle Road, Deal, Kent.

To the Editor of the "British Journal of Dental Science."

Dear Sir,—Without disputing the propriety of your strictures on the British Dental Association, in your issue of October the 15th, may I ask your attention to the following facts :—1st. That our Representative Board Meetings have what may be fairly called a good average attendance. 2nd.

Eighteen is considered a small attendance, and when business of importance is announced, the numbers run up to nearly thirty. Considering that many members reside at great distances from the place of meeting, I do not think that such musters show a lack of interest in the affairs of the Association, or that all who choose to join it are not well represented, or that there is likely to be amongst so many any one paramount will, or even a small clique overbearing all other opinions. 3rd. In our list of members we have about 350 qualified men, and the remainder, about 250, are unqualified. This shows that we welcome all respectable practitioners to our ranks. Whether our standard be too high or too low, or whether we may be considered to represent the profession, are questions apart from these facts. That we do represent the most active part of the profession is a position which I think can hardly be denied us.

I am,

Your obedient servant,

FREDERICK CANTON,

Hon. Sec.

British Dental Association,
40, Leicester Square, London, *Nov.* 6th, 1884.

To the Editor of "The British Journal of Dental Science."

SIR,—I should be much obliged if any of your correspondents would give me a hint as to the best way of attaching an artificial nose, either to what is left of one of the nostrils or to an artificial palate which he wears—the natural one being perforated.

Your obedient servant,

E. F.

To the Editor of "The British Journal of Dental Science."

DEAR SIR.—Will you kindly allow me a little space in your valuable Journal for the purpose of emphasizing certain points in the admirable address of Mr. Spence Bate before the British Dental Association at its annual meeting for 1884. His suggestion that "a committee might be appointed to investigate the best means of preserving and utilising the roots of teeth that remain in the mouth after the loss of their crowns by disease or accident, instead of removing them, or allowing them to remain as irritant bodies in the jaw," is an exceedingly valuable one. As somewhat in proof of the truth of his prediction that "Extended inquiry by an appointed committee on this subject would lead to a considerable revolution in the practice of dental surgery, to the honour of our craft, and of wonderful advantage to our patients," permit me to present a few facts concerning the value of those methods which are embraced under the head of crown and bridge-work.

These facts are the results of observations extending over nearly two years' time, in the extensive practice of Dr. Edward S. Gaylord, with whom I am associated. It is not necessary for me to describe the methods of operating which this work involves, as I have already done so in the *Dental Cosmos* for December 1883, and January 1884. I simply desire at this time to speak of the results and the changes which these results have wrought in our practice. The first and most important result is, that it has made extraction an act of very rare occurrence.

The second and hardly less important benefit accruing from this work is the almost complete obviation for the necessity of partial plates. I do not need to elaborate these advantages as their importance is seen at first thought. While the principal advantages of this work are in single crowns and short bridges of two or three teeth, yet we have quite a number of entire upper and one complete lower denture mounted upon four or more roots. In no case have we lost a single root or tooth upon which this work has been placed, and we have encountered no difficulties which were not easily controlled. Concerning the objection which is sometimes urged that the work is not conducive to a cleanly condition of the mouth I have only to say, that when the operation is properly performed this objection is without the slightest foundation in fact.

J. Leon Williams.

New Haven, Conn., Oct. 7th, 1884.

APPOINTMENT.

Frederick Newland Pedley, M.R.C.S., Eng., L.D.S., to be Dental Surgeon to the North-West London Hospital.

VACANCIES.

Lecturer on Dental Surgery and Pathology to the Dental Hospital of London and London School of Dental Surgery, Leicester Square. Applications, with Testimonials, on or before Monday, November 10th, 1884, addressed to the Secretary.

Demonstrator of Non-Cohesive Fillings to the Dental Hospital of London and London School of Dental Surgery, Leicester Square. Applications and Testimonials by Monday, December 8th, addressed to the Dean.

DENTAL HOSPITAL REPORTS. NATIONAL DENTAL HOSPITAL.

Monthly Statement of Operations from Oct. 1st. to Oct. 31st.

Number of patients attended		1696
Extractions	Children under 14	426
”	Adults	1080
”	Under Nitrous Oxide	500
Gold stoppings		66
Sheets of Gold used independent of Pellets		
Other Stoppings		490
Advice and Scaling		400
Irregularities of the Teeth		106
Miscellaneous		130
	Total	3198

Isidore Frederick Prager, House Surgeon.

MONTHLY REPORT OF CASES TREATED AT THE DENTAL HOSPITAL OF LONDON.

From October 1st to October 31st.

Extractions	Children under 14	421
”	Adults	920
”	Under Nitrous Oxide	536
Gold Stoppings		234
White Foil ditto		17
Plastic ditto		669
Irregularities of the Teeth		124
Miscellaneous Cases		375
Advice		140
	Total	3436

S. C. Buckland, House Surgeon.

ANSWERS TO CORRESPONDENTS.

Vulcanite and Celluloid, by Dr. Gilbert, is published by the S. S. White Dental Manufacturing Co., Philadelphia. The work can be obtained through Messrs. Segg, 322 and 324 Regent Street, W.C.

BOOKS AND PAPERS RECEIVED.

Lancet; British Medical Journal; L'Odontologie; Pharmaceutical Journal; Dental Cosmos; Zahntechnische Reform; Independent Practitioner; Progrès Dentaire; L'Art Dentaire; Chemist and Druggist; Dental News; New England Journal of Dentistry; Monatsschrift des Vereins Deutscher Zahnkunstler; Dental Luminary; Gazette des Hospitaux; Southern Dental Journal; El Progreso Dental de la Habana L'Odontologia; Pharmaceutical Journal; Dental Caries, by Henry Sewill, L.D.S.; Dental Headlight; Items of Interest; Centrallblatt fur Zahnheilkunde.

British Journal of Dental Science.

No. 405. LONDON, DEC. 1, 1884. Vol. XXVII.

DISEASES OF THE TEETH IN RELATION TO SO-CALLED REFLEX MALADIES.

II.

By Dudley W. Buxton, M.D.,B.S.,M.R.C.P.
Assistant to the Professor of Medicine in University College.

It may be taken as accepted that dental lesions give rise to diseased conditions in two ways. They may by direct continuity of tissue originate congestion and inflammation of the gums, while the same process may extend to the jaws and contiguous soft structures.

In the other case the local condition although the starting point of the trouble is yet dwarfed by the severity of some remote area of disease, the connection of which with the teeth is only assumed. The convulsions so common at teething are according to various authors cu to the most diverse conditions. Thus while Trousseau believes they result from thepyrexial state of the blood, a recent writer* holds that they occur independently of any elevation of temperature. Eclampsia again, it has been sought to explain, by supposing the hyperæmia which is present in the mouth structures, pervadesthe whole vascular and controlled by the vasomotor nerves of the head and neck Barrier, however, adopts another view, asserting that the whole nervous system becomes unduly excited owing to the impression made upon it by the pain experienced in the gums.

It is interesting to notice that some writers especially of the French school, refer the dentition diarrhœa to a similar origin, Bouchut going so far as to term it "nervous diarrhœa" thus associating it with that form of diarrhœa of which Shylock tells us and which manifests itself also amongst the emotional of adults.

In summing up it must be said that the preponderance of evidence shows that teething is more a predisposing than an exciting cause of trouble to children. At the same time warning is often given by the state of the gums and their departure from the physiological standard. Tnis should always be recognised as an indication of some morbid process at work, and should receive the earnest care of the medical man as well as the dentist. A search should be instituted to ascertain what is at fault and steps taken to remedy the evil before it has gone too far by the intervention of the nervous system. It is more particularly with this latter class of cases that we have to deal. Although we are at present not capable of defining exactly which does, what does not, constitute reflex or sympathetic disease, yet we may attempt a description, always provising that it aims rather at elucidating pathological enigmas than their solution. We must understand the terms of our problem before we venture upon an explanation of its mysteries. Let us then take the simplest case. We have a nerve centre, which performs the function of regulating tissue trophic changes, we have emissary nervous strands which perform the behests, so to speak, of the controlling centre; we have afferent nervous strands which travel from peripheral terminations to the centre. It is these last which maintain the centre *en rapport* with the outside world.

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*Lewis Smith Diseases of Children.

Pathology cannot at present tell us at what point the afferent impulses of nerves peripherally stimulated, may promote simple healthy growth and maintain the balance between destruction and regeneration, and at what point nutrition becomes deranged. The results of which we are cognisant on the one hand hypertrophy, on the other atrophy. We know that peripheral irritation acting upon nerves which are in connection with centres exerting trophic influence will, if allowed to act long enough, produce marked structural changes in tissues. The muscles of the arm become increased alike in bulk and power when subjected to frequent calls for action, but should so severe a strain be imposed upon the trophic centres as they cannot meet, the beam is kicked and a pathological atrophy replaces physiological growth. The trophic centres, however preside it may be, over a very wide area. One centre will dominate through its branches regions seemingly unconnected and widely remote alike in place and function.

A close physiological connexion was thought at one time to exist between the nerve supply of skin and subjacent structures, a connexion which probably really obtains even when coarse anatomy fails to demonstrate the nerve channels. Now it would appear that when the control and trophic centre is profoundly affected, that lesions result in one or more areas, due of course, to impaired or perverted nutrition. These areas may appear absolutely out of physiological relation until the connexion is sought and found in the nervous supply and associated trophic centres. An example will illustrate it:

A patient attending the ophthalmic clinic of a general hospital complained of *discomfort* about left conjunctiva. This was congested and minute vesicles were detected upon it. It was elicited that severe unilateral headache had become manifest. Examination of the scalp showed vesicles along the line of the supra-orbital nerve. It was a case of herpes from irritation of the supra-orbital nerve with impairment of the nutrition of the globe of the eye. This is an example of a nerve—the fifth pair—giving rise to lesions in areas absolutely distinct, namely, those of the scalp and those of the eye.

It is, then, mainly the fifth pair of nerves which directly or indirectly gives rise to those innumerable aches and pains with the causation of which folks saddle the teeth. A glance at the anatomy of this fifth pair of nerves will serve to clear away some of the difficulties in tracing to the teeth such diverse and apparently disconnected lesions. The two roots of the nerve—motor and sensory, supply motor fibres to the masticatory muscles, sensation to the face, fore part of the head, the eye, the ear, the nose and the mouth.

The first junction or anastomosis occurs at the Casserian ganglion where fibres from the sympathetic branches from the carotid plexus join it. The nerve then gives off its three large branches, the First going to the orbit and becoming connected with another ganglion—the ophthalmic—in which communication with the third nerve or motor nerve of the globe muscles and again with the sympathetic. The Second going to supply the face and the teeth of the superior maxilla as well as the mucous membrane lining the maxillary sinus, the mucous membrane of the lips, that of the nose and upper portion of the pharynx as well as the tonsils, uvula and soft palate. In the spherno-maxillary ganglion, in reality a plexus and not a ganglion, it communicates again with the sympathetic. The Third division supplies the teeth of the lower jaw, the gums, the salivary glands and articulation of the jaw, it also gives sensation to the side of the head, the external ear supplying the external meatus, the lower lip, and lower part of the face. The greater part of the tongue also obtains common sensation from this division. In the Otic-ganglion it becomes connected with the sympathetic and with the facial and glosso-pharyngeal nerves. The last named nerve supplies filamentsto the pharynx, tympanum and Eustachian tube, while we need hardly add, the facial nerve is the motor nerve of the muscles of the face. It is thus rendered plain upon anatomical grounds that the possible sources of nerve communication by overflow of central nervous explosive action or central trophic changes, are numerous. But it is by no means accurate to assert that all the possible channels of nervous intercommunication between the fifth pair and other nerves are exhausted in the above anatomical account. There exist closer and more subtile series of possible channels in the physiological continuity of parts and association in function.

How commonly is the aspect of the tongue taken as indicative of the condition present in the mucous membrane of the stomach, and yet how seldom is the physiological connection subsisting between the tongue and the stomach realised or duly appreciated. In the cycle of physiological function in which participate the various sections of the alimentary apparatus there are many vicissitudes, and it is undoubted that as one part becomes out of gear so do the others suffer. In this connection we have to call attention to the common errors into which the laity and even the medical practitioner so commonly fall in referring to the process by which the milk teeth egress, those many maladies which appear in the first few years of infantile existence. It seems to be inseparable from most of the more active evolutions which occur in the human frame, that profound nervous impressions are called into existence, impressions which break down the inhibitory resistances and so irradiate throughout the widest areas of the nervous system. The girl at puberty becomes the subject of such a nervous catastrophe, and in this way does the teething child shew signs of the most profound upset of its nervous centres.

The teething is one sign of a general cycle of evolution. The metabolism of the whole bodily structure is being worked, so to speak, under high pressure. A shock too trivial to elicit consciousness in the well-balanced nervous system of the adult gives rise in the infant to a wide-spread and profound derangement of function and even of development.

Dr. Eustace Smith* draws attention to the fact that the follicles which are found studded along the whole alimentary tract are in process of development and progress *pari passu* with the teeth, and hence alimentation must take place under the most strained conditions. And further we are bound to remember that although dentition is *per se* a physiological process, yet it taxes the children's strength, and coupled with the other processes of evolution at this time in active progress it is fully competent to kick the balance from the mean of health to the declension of disease. "Cross teething" may be symptomatic of an exhausted nervous centre, but when the trouble is in the tooth or kindred structures, it plays back in turn upon the central nervous system giving rise to some departure from the physiological cerebro-spinal function.

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*A Practical Treatise on the Diseases of Children.

In fine, children suffer from convulsions *during* teething, but more rarely are such convulsions elicited *by* the eruption of the teeth. This point is fully worked out in the classical work of Barthez aud Rilliet. As is well known, the pressure of the erupting tooth upon the gum gives rise to more or less stomatitis, a malady which may confine itself to the mouth in the region of the teeth in default, or which may spread far and wide. The nervous system is, as we pointed out above, peculiarly sensitive and impressionable, and it happens that the pyrexia caused by this stomatitis seriously disorders the child's powers of digestion. Thus, again, the vomiting, diarrhœa et cœt, ensue upon teething, and react upon the structures concerned in teething.

When morbid conditions are present, and teething has ceased to be a physiological process, we meet with some of those maladies, which form more particularly the subject of this paper. To stomatitis and gastro-intestinal catarrh we have referred above, aphthæ, vomiting and diarrhœa, complications occurring usually in warm weather, need not detain us; nor would it be profitable to dwell upon the pulmonary and bronchial troubles which replace them when winter succeeds to summer. The whole body being as it were on the eve of disease, that organ or system feels the brunt of it, which casually becomes exposed to some exciting causes.

At a meeting of the Council o the Royal College of Surgeons of England, held on the 19th ult., Mr. Henry Moon, M.R.C.S., L.D.S., was elected a member of the Board of Dental Examiners in place of Mr. Alfred Coleman, resigned.

Solder.—Pure tin one pound, tea lead half a pound, bismuth and rosin half an ounce each; melt all together in an iron vessel and mould into small bars.

SOME POINTS CONNECTED WITH THE TREATMENT OF FRACTURE OF THE INFERIOR MAXILLA.*

By F. Newland Pedley, M.R.C.S., and L.D.S., Eng.

Mr. President and Gentlemen,—The subject which I have undertaken to bring before you to-night is one that is peculiarly interesting to us, for it gives the widest scope to that combination of manipulative skill and surgical knowledge which forms the ideal of modern dentistry.

The title of this paper sufficiently disclaims any intention on my part of attempting an elaborate thesis on the wide subject of fractures of the maxillæ. The production of the last edition of Mr. Heath's well-known book on "Diseases of the Jaw," added much to a literature which was in some respects deficient: for, at the time I undertook to write this paper, I knew of no familiar work that contained a clear discription of Hammond's splint, save the last edition of "Holmes' System," and even there I had been permitted by the kindness of Mr. W. H. A. Jacobson, to supply some of the details.

There remains, perhaps, little I can bring before you to-night that is original or novel, but I shall be more than contented if the record of my past experience in this subject, acquired in hospital, shall be of practical utility to some, and confirmatory of the views of others.

General hospitals offer the best field for the study of this lesion, and I am led, by comparing notes with my professional friends, to infer that Guy's Hospital is especially favoured in the numerous patients with fractured maxillæ who seek aid there.

I have for some years studied these cases in assisting Mr. Moon, and could willingly believe that their numerical significance is solely attributable to an intelligent appreciation on the patients' part of the successful form of treatment adopted there; but the suggestive fact cannot be ignored that the hospital drains much of the low district of transpontine London, where heavy boots and clenched fists are the emblems of law and marital authority.

Kicks and blows amongst young adults cause most of the cases that we see; for after middle life the loss of teeth, laxity of capsular ligament, and flattening of the articular surfaces, favour dislocation rather than fracture.

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*Read before the Odontological Society of Great Britain, on Monday, Nov. 3rd.

The commonest site is close to the canine tooth, because the bone narrows somewhat at that point, and the great point and the great depth of the socket of the tooth tends further to weaken the bone.

The site next in order of frequency to be affected is the angle of the jaw, and then fractures through the neck of the condyle. Separation of the lateral segments of the lower jaw at the symphysis is not common, although I have seen several instances of it, and, as one might expect, it is more prone to occur in early life than later. Multiple fracture is frequently met, and in any given case too careful search cannot be made for a possible second or third point of division. The diagnosis of condyloid fracture, under such circumstances, is not easy, for crepitus is transmitted along the bone from the more anterior spot, and combines with the mobility of the joint in rendering tactile evidence nugatory.

The treatment of a break in any part of the ascending ramus is most unsatisfactory, for the teeth are almost useless as fixed points in the application of a splint, and the upper fragment is short, moveable, and attaches powerful muscles. These are the cases in which little can be done but to apply the old gutta-percha external splint, or " boot " as it has been termed, and the same objection to its use is valid against all those other splints that have been devised to retain the fragments in correct position by means of a framework round the teeth, carrying a pad or wings that maintain counter pressure upon the outer surface of the cheek over the site of fracture. Londsdale's, Hill's, and Moon's splints represent this class; of which the latter is said to be the best, yet the inventor has abandoned its use of late years in deference to its defects.

The consequent pain and swelling of the face necessitate the relaxation of the pressure, and in the graver cases where a sinus with an external opening becomes established, the gutta-percha splint becomes a mere receptacle for putrefying discharges, and is worse than useless.

Little is necessary but to enumerate the previous forms of apparatus ; for a familiarity with the use of Hammond's splint renders the admission imperative that it possesses great superiority over all others in those cases where there are firmly implanted teeth in each fragment.

The favourable results that dental surgeons obtain from the use of this splint in hospital practice derives additional force from the consideration that it is chiefly in the complicated cases that the skill of the dental specialist is invoked. This fact was strongly impressed upon my mind in conversation with Mr. Bryant when I was disparaging his splint for fractured inferior maxilla. There were several of these hospital patients under his treatment at the time, and he maintained that 75 per cent. of the aggregate number of fractures got well under any treatment, and a great proportion of them escaped attention as dental surgeon's cases. The splint Mr. Bryant was using was made of several thicknesses of plaster of Paris bandage, accurately moulded to the outer surface of the chin and jaw ; with the four-tailed bandage as a support.

I watched the patients in question, and was constrained to admit that they progressed favourably, and that the plaster of Paris bandage was light, efficient, and easy of application ; yet I think that the more favourable instances of fracture are essentially those which would also yield the best results in the hands of general practitioners by a modification of Hammond's splint, much used at Guy's Hospital, and which I will subsequently describe. The exercise of great manipulative skill, in such instances, is not exigent, and there is no need to take a cast of the mouth or to solder the wire.

The typical Hammond's splint, which he has recently described so well, is only demanded where the fracture is multiple, or the displacement is obstinate, and on all occasions the aid of a dentist will wisely be sought in its preparation.

The teeth contiguous to the line of fracture are temporarily fastened together with silk, whilst impressions of the lower and upper jaws are taken in "Stent's" composition or wax ; and plaster casts obtained. This is no easy matter, even for a dentist, in severe cases ; for he is embarrassed by the swelling of the face, and the inability of the patient to open the mouth sufficiently for the introduction of a full-sized impression-tray. The mobility of the fragments, and the great pain occasioned, necessitate the use of very soft impression material, and the avoidance of firm pressure. On one occasion I was glad to use half-trays, and to take the impression of half the jaw at the time. This method is less distressing to the patient, and I see no objection to its adoption, provided the upper teeth offer a satisfactory guide for the subsequent articulation of the segments of the lower jaw.

The plaster model of the lower jaw is sawn through at the point or points of fracture, the displacement is corrected, and the normal occlusion obtained by the use of the cast of the upper jaw as a guide. Plaster of Paris is used to fix the segments in their right position.

A loop of wire is framed upon the corrected model, passing behind the last tooth on each side of the lower jaw, surrounding the dental arch like a collar, and accurately fitting the necks of the teeth at the margin of the gum.

Reasons that I have mentioned may lead to the use of models that are imperfect in the region of the back teeth, and in shaping the splint it is not very important if the wire passes somewhat wide of the posterior surface of the last tooth. The least error in the opposite direction renders the appliance utterly useless.

The wire strand, thus prepared, is slipped over the teeth of the fractured jaw by reducing the displacement, and is secured to two or more teeth on each side of the mouth by means of a binding wire passed in a "figure of 8" round the individual tooth. Quoting Mr. Hammond's description of the "figure of 8" the wire is to be passed between two teeth, "directing it slightly downwards so that the end will come out under the inner bar of the frame. Have the forefinger of the left hand inside to feel for the point, and with it turn the wire upwards and outwards, so as to avoid wounding the tongue. Then bring the wire back over the inner bar of the frame and under the outer ; cross the ends," and twist them together loosely.

The wires do not cause irritation of the gum if a mouth rinse of spirit (1—6 of water) be used.

This mixture finds much favour amongst hospital patients if made from rectified spirit, for it seems to bear a vague but definite resemblance to whatever form of alcoholic preparation the patient may be addicted to.

The more obstinate the displacement, the stouter should the main wire be, provided the teeth be not too short in the crown to retain it in position.

A very useful modification of Hammond's splint is much used at Guy's Hospital by which the necessity of soldering and model-taking is obviated : points of special recommendation to the general practitioner.

By its adoption the treatment of the milder forms of fracture is greatly facilitated, and it is especially applicable where the lesion is situated anteriorly, and the displacement is not very marked.

The main strand is not passed behind the last tooth, but between two teeth on each side of the jaw in the following manner. The point of the wire is sharpened by being divided obliquely with cutting pliers, and is passed into the cavity of the mouth between the bicuspids or the more posterior teeth, and is brought out again by being passed from the lingual surface, between two teeth on the opposite side of the jaw. The intervening portion now lying on the tongue is manipulated into close contact with the lingual surface of the necks of the teeth. The wire is then carried across the labial surface of the teeth, and its ends twisted loosely together. It is not desirable to twist up the main strand very tightly at first, for so doing would impede the passage of the binding wires, and tend to drag away the strand from the lingual surface of the teeth. The binding wires are passed in the usual way, and twisted together, loosely at first. Finally, all the wires are twisted tight, a few turns being given to first one and then another : the ends are cut short and tucked under the splint to avoid excoriation of the mucous membrane. Rarely should a binding wire be attached to a tooth immediately contiguous to the line of fracture, for loosening of such a tooth is the usual result.

A few special points, as regards the passage of the main wire, are worthy of mention. The teeth should be scaled, and a steel probe should be used as a pilot, and as a gauge of the precise available amount of space between any two teeth.

Usually the chosen interspace on one side of the mouth is a little wider or more favourably situated than on the other, and it is well to begin the operation on the more difficult side, for the the light is better and the tongue is not in the way at first.

A slight upward curvature of the end of the wire makes it easier of passage between the teeth, and lessens the risk of pricking the side of the tongue, or the cheek, which is liable to occur at the moment when the short sharp end of the strand emerges from between the teeth, and requires to be raised. A slight perforation of the gum margin is often necessary, and causes little pain or subsequent irritation ; but the tongue and cheek require protection with a finger of the left hand. The prick or scratch that the surgeon's hand is liable to sustain, is of slight extent, but strongly suggestive of traumatic inoculation. This is one of the reasons that have induced me to devise two pairs of forceps of a suitable curvature, length and strength, and a spoon-shaped spatula to protect the mucous membrane of the mouth, to reflect light, and to direct the tip of the wire upwards. A blunt hook with a notched point, and somewhat similar instruments with curves in opposite directions, are useful in manipulating the wire into contact with the lingual surface of the teeth.

Mr. Moon has latterly introduced an improved method of fastening the ends of the main strand, in place of twisting them together, and hence less likely to displace the fragments. The principle consists in passing the ends of the main wire through a short piece of closely-fitting metal tube, then giving them a sharp bend in the opposite direction, and cutting short. A soft sheathing for the joint in the wire is afforded by a piece of caoutchouc tubing threaded on to the main strand before the metal tube is fixed.

The result obtained by this modification of Hammond's splint is all that can be desired in cases where there is no obstinate horizontal displacement, or where there is only a slight amount in a vertical direction: the latter tends to correct itself. In recent cases an advantage will be obtained by allowing a day or two to elapse before treatment is commenced, in order to diminish the swelling consequent upon the direct violence that caused the fracture. I have only seen one case in which the fracture was not compound, but the risk of considerable necrosis is very slight, and fatalities are very rare.

A fatal case, however, came to my knowledge, which occurred at Bedford, in June last. The patients's jaw was broken at the angle, and near the canine tooth, in a fight. A gutta-percha splint was applied, externally, and failed; and then a gutta-percha appliance was tried inside the mouth. The patient was suffering from a severe cough, and the fragments became displaced. The splint was removed, hæmorrhage occurred from the floor of the mouth, which eventually led to ligature of the common carotid artery. The hæmorrhage ceased, but the patient died.

(*To be concluded*).

IRREGULARITIES OF THE TEETH.

By Mr. Norman Kingsley, D.D.S., of New York.

With advancing civilisation there is an apparent increase of deformities of the dental arch.

In the higher social scale it is exceptional to find a young person with a perfectly developed and regular row of teeth, set in a well-formed and rounded arch. More commonly, departures from this type will be found of every grade, more or less pronounced—exhibiting some of the phases of narrowed jaws, or teeth protruding, over-lapping, or crowded in every conceivable mal-arrangement. In many instances the cause has some direct connection with other evils that seem inseparable from a state of high civilisation.

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* A paper read before the Odonto-Chirurgical Society of Scotland, November 13th, 1884.

A close observer for a generation will have seen a multitude of cases which had no apparent local cause, were not of an inherited origin, and could only bo attributable to constitutional conditions developing in the individual.

As a general statement, the finer the nervous organisation, the more precocious or brilliant the intellect, the greater will be the tendency to dental deformity. The converse is true of feeble-minded people who, having a fair physique, will show well-rounded jaw and regular dental arches. The exceptions to the latter statement are found among those cases of hopeless idiocy where the whole organisation, as well as the intellect, is depraved.

Many peculiarities are of an inherited origin so far as the individual is concerned ; but what caused the initial departure from a normal type in preceding generations would be impossible to determine. More readily, perhaps, than any other deformities of the human organisation are dental irregularities transmissable, and departures from a normal type in the parents re-appear in the children in an exaggerated form.

Irregularities that require treatment never appear in the deciduous teeth. The deciduous dental arch is always well-formed and symmetrical. It is only in the second set that deformities make their appearance, and it is exceptional that such peculiarities can be foreseen and prevented. It cannot be determined with any certainty before eruption that a dental arch is going to be abnormal, the causes being generally hidden and remote.

The normal type of the dental arch describes a regular line. The arch may be wider or narrower, varying somewhat in individuals or races, but the line will be an easy, graceful curve, without break or tendency to form an angle. Within certain limits, a narrow dental arch, as associated with certain features, may become the perfectron of beauty ; while with another form of head and face, the widest development may be equally pleasing.

That which is recognised now as the standard or full measure of beauty as well as utility is not unlike that which existed in the remotest historic ages, nor difierent from that which is now exhibited among all communities not degenerated by luxury or vice.

Abnormalities include such a shape of the arch as is not in harmony with the surrounding features ; all crowding and twisting of the teeth ; and all departures from a regular line in their positions. One form of irregularity seems to be due to unwise or premature extraction of the deciduous canines of the upper jaw. In the ordinary course of nature these teeth should be the last to drop out. If extracted long anterior to their period of shedding, the permanent bicuspids are liable to encroach upon the domain of the canines, and thus deprive them of their place in the arch. Such a malposition can be foreseen and prevented.

Another abnormality of the superior dental arch which can be prevented is the result of thumb-sucking or its equivalent in the earlier years of childhood. The effect of such a habit is to protrude all the teeth in the front part of the mouth. This deformity will not show itself until the eruption of the permanent teeth, sometimes even after the practice which caused it may have ceased. In one instance which came under the author's observation, a mother of good social position had nursed from her breast a daughter until she was nine years old, the result being that the six upper front teeth were protruding so that the lips could not be closed. But a large proportion of dental irregularities cannot be predetermined with certainty even where there is in hereditary tendency, and can be corrected only when they develop.

An observer with limited experience may often be misled by the appearance of teeth as they first erupt. They may seem to be growing out of the line of the arch, and that a permanent irregularity is inevitable ; but many such cases need no interference. If left to themselves, they will approach regularity and often assume their true positions, unless the occlusion of the antagonising teeth prevents them. But interference is demanded as soon after eruption as it becomes certain that a deformity is inevitable. There is then no longer justification for delay ; for after that period every year increases the difficulties both pathological and mechanical, and prejudices the stabilito of the dentel apparatus.

But all irregularities in the position of the teeth are not deformities which demand treatment ; there are many departures from a normal type where neither the utility nor the beauty of these organs, nor the symmetry of surrounding features, is seriously affected by such malposition.

The regulation of teeth involves often the wearing of fixtures which cannot be removed and cleansed as frequently as the health of the mouth demands. Their continued presence may provoke caries of the teeth, and a prolonged treatment may seriously impair a nervous system ; therefore, regulating teeth should not be undertaken without due consideration. Such a consideration must recognise the ago, sex, the family type, and the relation of the features ; the cause of displacement, the constitution of the teeth, and the ravages of decay ; the efficiency of the masticating apparatus, the enunciation of the voice, the risk of inflammation, and the destruction of pulps ; the systemic condition and enduranse of the patient ; the time required and the annoyance to which he would be subjected ; the means and appliances for correction ; and finally, the character and permanency of the changes wrought.

Regulating teeth may be undertaken under favourable circumstances at any age short of full maturity ; but, all things considered, the most desirable period to begin the correction of an extensive irregularity is when the cuspidate and second molars are fully erupted. The occlusion of the teeth is an important factor in determining the permanency of the change. All attempts at correction at any age will be folly, unless the antagonising teeth upon occlusion will serve to hold them in their new positions.

Success in treatment is based upon the fact that the teeth are placed upon the maxillæ, surrounded by vascular, elastic, bony processes, which are easily moved or absorbed under pressure, and that reproduction of bone will follow such conditions and make the teeth solid in their new locations. The possibilities under favourable conditiens, within certain limits, are almost unbounded. Narrow jaws may be widened, protruding jaws made to recede, individual teeth moved considerable distances, and teeth elongated or shortened, or twisted in their sockets. The successful efforts in this direction have been triumphant.

Some of the most marked cases have been where the face has been deformed by a protruding or receding jaw, either upper or lower. Strictly speaking, when this occurs with the upper jaw it is not the maxilla which is at fault, but rather the whole dental arch. Such a condition in the lower jaw is more likely to arise from a malarticulation at the joint ; but in either case, when taken at the proper age, they are quite amenable to treatment.

Swallowing Dentures.—The danger of sleeping without removing dentures is illustrated by some cases which Dr. Leroy Maclean reports in the *Medical Record*. He reports five cases of œsophagotomy successfully performed—one for removal of a penny and four for artificial partial dentures. In neither of the cases had the obstruction reached the stomach, although one plate had been swallowed twelve months. While one of the plates swallowed was knocked down the throat by the fork at meal time, the others were dislodged during sleep.

CLINICAL STUDIES ON THE COMPLICATIONS OF DENTITION.

DR. E. MAGITOT.

(*Continued from page 1049*)

ORGANIC COMPLICATIONS.

The organic complications comprise three orders of lesions :

1° Follicular cysts of the wisdom tooth.
2° Odontomata.
3° Various neoplasms.

With respect to this last category of pathological phenomena, we must make a preliminary remark. It is that they are in reality, due, not to the more or less complicated eruption of the wisdom, but rather to the absence of this eruption, or if one may be allowed the phrase, its non-eruption. Disturbances of an organic character represent, indeed, the complications of evolution more than the phenomena of eruption. On this account, we shall merely recall them to memory as they have been described elsewhere.

We must observe here, that the wisdom tooth takes a prominent part among the facts of organic alterations, involving a dental origin. The cysts of the follicles of this tooth are frequent, sometimes occupying the body of the inferior maxillary, as in the case cited by M. M. Richet and Herbet, sometimes in the thickening itself of the coronoid apophyses as in the cases brought forward by Forget, Guibout, and ourselves.

We cannot describe again the cysts of the jaw here, nor shall we go into the question of the odontomata, which frequently originate in the follicle of the wisdom tooth, under the influence of a premature compression and consequently inverse to eruption. Such are the observations of Broca, of Forget, of Panas, and of several other authors.

As for the neoplasms of the jaw it is incontestable that a great many of them originate in the region occupied by the follicle of the wisdom tooth. Sometimes, these are the enchondromas, or fibro-enchondromas, in the centre of which wisdom tooth is discovered, confirming this point of athogenesis. Watermann and McCormac have each brought forward a case in point.

Sometimes these neoplasms are the osteomas, as described by the authors of the compendium ; sometimes they are the epitheliomas which may be recognised here as the pathogenesis so judiciously invoked by Verneuil at the expense of the epithelial remains of the follicular cord.

D. TREATMENT OF THE COMPLICATIONS ATTENDING ERUPTION OF THE WISDOM TOOTH.

The description of the different modes of treatment of the complication of the eruption of the wisdom tooth, present the same subdivision as the forms of the complications themselves. For the therapeutic intervention, to be truly efficacious, it should be employed promptly the (diagnosis being clearly worked out) to the seat of the origin of the complications, or, even better, to the organ, which constitutes the point of departure from health. This first rule is of the greatest importance as saving the patient from becoming involved in a symptomatic treatment which ought in every case to remain secondary.

Let us suppose the first case, that is to say, that in which, the complications are localised in the inflamed mucous membrane, either by compression occasioned by the eruption of a tooth, or by the contact and contusion of an opposite tooth, or by both together. We will admit the case to be simple, that is to say, not complicated by any affection deep or periosteal, of the maxillary bone nor of the bony tissue or muscular contraction. It is the commonest form. The indication is here very clear ; to precipitate the eruption of the wisdom tooth by incision and excision of the mucous membrane. Incision alone is rarely sufficient ; many writers who advise it reproach it and justly, as being speedilv followed by the reunion of the shreds and of a complete return of the complication. To avoid this inconvenience, Toirac interposes between the lips of the wound, a piece of lint, renewing it from day to day until the edges are separately cicatrised and have lost all tendency to grow together.

It is on account of this inefficacy of simple incision that the V-shaped incision is employed, or a crucial incision followed by isolating applications, have been recommended. These various incisions possess a uniform efficacy. Some writers have suggested that astringent or caustic applications should be added ; Chassaignac extols nitrate of silver, an insufficient means ; Toirac the actual cautery, which Lisfrane so truly decries as the destroyer of the enamel and preparing the way for ulterior changes in the tooth. A similar reproach may be levelled at the practice of Tomes who prescribes the touching of the shreds with nitric acid, the effects of which upon the tooth he seeks to neutralise by means of phenate of soda.

As to the process of incision itself, the bistoury has been recommended which is far from convenient and might be replaced with advantage in this instance by a little scalpel with a short blade and resisting back.

The incision should be made, before and behind, and ought to penetrate the thickness of the tissues, as far as the surface of the crown itself. It is not indispensable that the blade be very sharp, a torn wound having less tendency to heal than a clean cut incision; if the isolating process be resorted to, the practice of Toirac should be followed. If caustics should be employed, we should advise chromic acid be used alone, as it does not act upon the enamel and cauterises the mucous membrane. However this may be, the incision of the gum is generally insufficient and may be rejected. We will not pause to join in the violent attacks which certain writers have made upon it, attributing to it, the greatest complications and even death itself, as in a case brought forward by Tulpuis of Amsterdam.

In all those cases, indeed, in which, incision of the mucous membrane will appear indicated, excision may be preferred.

This operation performed either with the bistoury or scissors while the other part of the fragment is fixed with forceps to the fangs, is, in all points, excellent in cases where the complications are confined to the gum.

The ablation of a shred ought to be circular or semi-circular and should uncover the crown entirely.

The edges of the wound should be touched directly by an application of chlorate of potash either dry or in powder applied in pastilles or a saturated solution. If the cicatrisation be accompanied with the growth of fungous granulations or tumefaction, chromic acid should be resorted to, which should be applied more particularly still to ulcerations, involving complications in the gingival region.

To this practice so efficacious in most cases, may be added another which consists in cutting away the nodosities or indurations that are formed at the side of the cheek or at the anterior portion of the mucous membrane. It is necessary in short, to disengage the crown entirely to promote its ascension. But if the practice that we are about to point out, be sufficient in most cases of complications connected with the mucous membrane, it is not applicable to those which are complicated by phenomena of compression or bony complications with or without muscular retraction and swelling of the cheek. In this case the operation should not be directed to the mucous membrane, but rather to the alveolar process itself, the centre of the compression. This removal of the cause of the complications can be affected by two means the first recommended by Toirac, consists in getting rid of the obstacle, namely, the second molar ; the second, in doing away with the instrument of compression even if it be the wisdom tooth itself.

Toirac's method is strictly logical, for it has been proved by observation, that in a mouth where the second molar is wanting, the complications of the wisdom tooth are not produced. It has been applied several times by this and other surgeons.

We reject it entirely and for the following reasons:

1° We know of many cases in which for grave disturbances, the operation has not prevented complications of the wisdom tooth from continuing their morbid evolution leading at last to its extraction.

2° It appears to us irrational that to prevent complications of a tooth almost useless in the functions of the mouth, as is the wisdom tooth, the subject is to be deprived of an essential organ, the second molar.

° To these two reasons another may be added, namely, that in all cases in which the second molar is removed, it is almost as easy to extract the third, and that, if this last operation be considered difficult the second molar can be removed, and afterwardsbe re-implanted in order to reach the wisdom tooth and perform ablation. In the practice which we recommend, we must devote ourselves exclusively to the tooth which is the essential cause of the complications and to none other. *(To be concluded.)*

STOMATITIS.*

By Louis E. Sexton.

Mr. President and Gentlemen,—In a part so freely supplied with blood as the mouth is, we might with great reason suppose that inflammation with its consequences would be, if not common, at least not rare, and this we find to be the case, and when it exists it is known by the name of "Stomatitis," from *stoma* a mouth, and *itis* an affix denoting inflammation.

This inflammation, although not confined to children, is most frequently found among them; partly, I suppose, because in childhood the system is more open to inflammatory states than in adults, and also because dentition would supply sufficient local cause to excite it, but it is not very uncommon among adults, and may be brought on by a variety of causes, of which the following is a brief summary:

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* Paper read before Students' Society, Dental Hospital of London.

Direct local irritation, as for instance a loose stump, the edge of a broken tooth, the effect of scalding fluids taken into the mouth, the reaction which follows the contact of any very cold substance such as ice with the mouth; or it may follow upon the presence in the mouth of some sour or acrid fluid, derived from the stomach as the result of some gastric disturbance; or it may result from the spreading of inflammation from surrounding parts, and some would even fix it upon those much-offending little bodies—the germs.

These, which are the usual exciting causes, act with greater power if they are preceded, and such is usually the case, by anything which would have a debilitating effect upon the general health, as poor diet, insufficient exercise, want of fresh air, in fact all those things included under the comprehensive term of "bad hygiene," also when the system is enfeebled after an attack of some fever or illness, such as measles, &c.

The symptoms which usually indicate the presence of stomatitis in one or other of its forms are, 1st, Altered sensations as for instance pain or soreness, heat, dryness, or the sense of taste may be deranged, difficulty in opening the mouth, in swallowing or speech, fœtor of the breath, the escape of blood or pus from the mouth, or an alteration in the quantity and quality of the saliva, and if the mouth be examined, the following is Professor Wood's description of the general state of affairs there:

"The inflammation may appear in reddened somewhat elevated patches or occupying large spaces, sometimes spreading over the whole of the mouth. In some cases it is merely superficial, characterised by redness, sense of heat, perhaps with considerable tenderness, but not usually with acute pain. In others, it occupies the whole thickness of the membrane extending sometimes to the submucous tissue, and even to structures beyond, as the sub-lingual and the submaxillary glands, and the absorbent glands of the neck, causing considerable tumefaction in all these parts, and occasioning severe pain; in fact the deeper seated the inflammation is, the more acute is the pain.

"The epithelium sometimes becomes opaque, giving an appearance of whiteness in streaks or patches, frequently this coating is elevated in a kind of blister, or even detached from the skin (like the cuticle) in scales, when the gums are affected they swell and rise between the necks of the teeth, round which they frequently ulcerate, which in severe cases may not cease till it has invaded the sockets, destroying altogether the connections of the teeth, which then loosen and fall out."

From this it will be gathered that Stomatitis may appear in many different forms, and here different authors disagree in the number of varieties which exist, some as West, Fairlie Clark, and others, giving only three; others giving as many as seven or eight, thus: simple or catarrhal, follicular, aphthous, ulcerative, parasitic, gangrenous, mercurial, and scurvy. But I think we may with great justice and propriety exclude the parasitic variety (or thrush), and scurvy, and also the mercurial. This would leave five varieties, and about these there is considerable difference of opinion, some believing them to be different species as it were, and others believing that they are only different varieties of the same species. I think for the sake of description, if nothing else, it would be more convenient to describe them as different stages of the same disease, as by so doing they follow the course of the usual results of inflammation, namely, ulceration and gangrene. I will now briefly give the general characteristics of each stage, and then go on to the treatment.

The first simple or catarrhal stomatitis may be looked upon as the starting point; this is marked by slight swelling, redness, and increase of heat in the part affected, with more or less dryness, with heightened sensitiveness which may vary between simple tenderness to acute pain, especially when the lips or tongue are moved; occasionally the white patches due to the scaling of the epithelium are noticed. This initial stage is common in young children; when it occurs during dentition it is often accompanied with fever, and if long continued with an abundant flow of saliva, if it occurs previous to dentition, fever is usually absent.

This state is brought on either by the irritation of dentition or by reaction from cold, or by irritating fluids from the stomach; it is also said to result from excessive smoking.

This form is usually very slight, passing off by itself, but I was rather surprised to find that "If severe, it may spread to the œsophagus and stomach, or to the larynx and trachea, and at last prove fatal."

The second kind or degree of stomatitis is known as the follicular, in this the mucous follicles of the cheek are chiefly involved; these appear as prominent isolated red glistening specks which may coalesce, so that the whole surface may present the appearance of inflammation; these patches then soften down and ulcerate, forming the stage known as the aphthous. The appearance of these aphthous ulcers are that they are small, flat, circular, or oval; they generally occur in clusters and in successive crops; their bases soft and smooth, thin yellowish or greyish slough, margins well defined, surrounded with a bright red areola; they are commonly situated on the fore parts of the lips, accompanied with congestion of mucous membrane.

(To be concluded.)

NOMENCLATURE OF THE ART AND SCIENCE OF DENTISTRY.*

Report by J. Taft, Chairman.

(Concluded from page 1046).

Having heard the anterior root of a lower molar defined as the mesial root, and not being able to appreciate the sense of such a definition, it is proposed here to bring before the Association the terms "mesial" and "distal," in order to get a true definition and the proper use of these terms.

Mesial Greek, *mesos*, middle; anatomical definition ("Medical Lexicons"), an imaginary plane dividing the head, neck, and trunk into similar halves, towards right or left; every aspect towards this plane is mesial, and every aspect towards right or left is lateral, every lateral aspect being either dextral or sinistral. In the human subject the teeth are arranged around the margins of the jaws in a parabolic curve, or approximating it, and on this account special names have been applied to various surfaces with reference to front, back or sides, in order to indicate the position occupied by the teeth and their relation to definite terms universally made use of by anatomists, to with, median, anterior and posterior. It is, therefore, correct to designate the approximating surfaces of the central incisors as the mesial surfaces, because the position occupied by them fulfills the concept we have, that if the median line passes between them the surface looking towards this line is the mesial surface, the labial surface representing the anterior, and the lingual the posterior surface of a central incisor. But, as before stated, the maxillary arch forms a parabolic curve; hence, it stands to reason that when this term is applied to a bicuspid the position of surfaces changes entirely—that is, if the same nomenclature is employed, the surface that was properly designated mesial in the incisors becomes an anterior surface in the bicuspid, in either the upper or lower maxillary, and what was denominated anterior and posterior in relation to the median line must now either be defined as labial and lingual; or if you will—carrying out the meaning of the word mesial—designate the lingual surface as the mesial ; for it is the one surface that looks towards the median line.

Dentine.—The word dentine has been long in common use, to designate that part of the tooth constituting its body, which is found beneath the enamel and the cement. Perhaps no better term than this can be found. The word "dentos" has been suggested as a substitute for the word dentine, but why the change should be made we do not readily see. The word dentos may be appropriately used as a name for the bony covering of the dentine of the root of the tooth. This material is usually denominated the cement or cementum ; both meaning the same thing, cementum being the Latin form of the word, cement the English. This outer portion of the tooth partakes much more nearly of the structural character of bone than of dentine, and so may with propriety be denominated dentos. This word would be far better restricted in its application to this part of the tooth. Dr. Chase, of St. Louis, some years ago suggested the use of this name. However he may have intended, it has been used by many as designating the hard structures of the teeth and by some the dentine merely. This word is an illustration of certain cases in which it seems better to use the word ef another language. The cases in which this is necessary are few and the number should be lessened whenever practicable.

Tooth-Pulp.—The soft, highly-organized body occupying the central portion of every tooth is frequently called the "nerve" of the tooth. Many of our best writers, from custom or habit rather than from a proper application of this name, have used it. It has perhaps received this nomination beceuse of its extreme sensitiveness when exposed to external contact ; but the inappropriateness of the term is apparent when we remember that only a very small part of this body constitutes the actual nerve-tissue. It is made up of a small portion of membranous and fibrous tissue, of a large amount of fluid or semi-fluid, veins and arteries, together with a small amount of nerve-tissue. There is no more propriety in denominating this body a nerve than in so designating any other highly-sensitive and finely organized tissue or part of the body. The eye as a whole, for instance, may be as properly designated a nerve. The word nerve as applied to this tissue is to the student at least misleading. This structure has sometimes, very inappropriately, been called the lining membrane of the tooth, and hence some writer in former years spoke of destroying or removing the lining membrane evidently meaning the pulp of the tooth. The word "pulp" or "tooth-pulp" is sufficiently distinctive and understandable and could not be mistaken for anything else, and would convey more nearly the idea of the structural character of the tissue. It has been suggested that the use of this name might also indicate that pulp-mass from which the tooth grows. This is readily distinguishable, however, by the word "embryo." Is it not proper and desirable therefore to designate this soft tissue as the "pulp" rather than the "nerve?"

Periosteum.—This is the usual name given to that thin layer of soft tissue immediately surrounding the root of every tooth. Some have been disposed to use the word "periodontium." For such a change we really percieve no valid reason; this tissue of course, surrounds the dentine, but is not in contact with it, the cement or dentos intervening, which in structure is more nearly allied to bone than the dentine, and it is in actual contact with the former and not with the latter. If the desire is to be very definite and indicate that this structure is about the teeth rather than some other bone, let the qualifying word "dental" be adopted. The phrase "dental periosteum" is as easily spoken and really more distinctive and more euphonious than the word periodontium. When we spoke of an inflamed condition of this tissue in conformity with this we would say periostitis instead of periodontis.

Mechanical Dentistry.—This phrase has long been used to designate that part of dental science and art which has to do with the manufacture and insertion of artificial teeth and all that pertains to it. So far as the needs of mechanical skill are concerned this name may be sufficiently distinctive, but it is not sufficiently extended in its reach. Some may execute well in a mechanical aspect, and yet signally fail in the production and application of substitutes for lost teeth and the restoration of adjacent parts. The name that will embrace both these ideas, namely, that of mechanism and of art, that shall enable the *application* of it to the parts here indicated, is that which should be employed, and in search of some extent, no better term occurs for this name than "dental prosthesis." Some have been disposed to change the form of the phrase "prosthetic dentistry." The other is a better phrase, we think. This nomination is slowly but surely making its way in the literature of our profession. It will probably be used ere long to the exclusion of the phrase "mechanical dentistry."

Operative Dentistry.—This name or phrase is usually employed aud properly so, to designate operations upon the natural teeth for their preservation, or rescuing them from the ravages of disease. It embraces operations upon, and treatment of the natural teeth, and is sufficiently clear and distinctive. There has been a little disposition in some quarters to drop this name and embrace everything done in the mouth upon both the hard and soft tissues in the name of "oral surgery." This may with great propriety be applied to all operations upon the soft and hard parts in and immediately about the mouth, but the nature of the operations upon the teeth is so different from those performed upon the other parts of the mouth as to justly entitle them to a distinctive name. There is sometimes an effort made to have a name embrace too much, and this would seem to be a case of that kind.

The Section in fulfilment of the task assigned it, have deemed it proper to present these few illustrations of changes which may be appropriately made in the special nomination of our profession. These are only a few to which reference may properly be made, but time would hardly permit a more extended presentation of the subject, and we fully recognize that change of language is necessarily slow. It would be a waste of time to even suggest any very great or radical change, with the hope that it would receive even brief consideration ; but where there are manifest defects in our language. and especially in its nominations, which must be apparent to persons of general culture, and where names tend to confusion rather than to a clear understanding, it behoves us to do what we may to remedy such defects. The great difficulty that lies in the way of changes such as are here suggested is found, not so much in the question as to whether they are correct or not, as in the carelessness and want of attention by those who should be interested to make progress, and secure the best form of distinctive literature.

BRUSSELS.

(*From an occasional Correspondent.*)

PALAEOUTOLOGICAL MUSEUM.

MOST visitors to this city as they pass through the Court of the Musée Royal on their way to the gallery of ancient and modern pictures, are attracted by the sight of a huge glass case. This case, which was erected a year or two ago, contains the skeletons of the two Iquanodons, perhaps the two most remarkable specimens of pre-historic fauna to be found in any European museum. These enormous amphibia, which have more the appearance of kangaroos, were really giant lizards. They were found in 1878 in a Belgian coal mine at the village of Beruissart, at a depth of 356 metre (395 yards) in the Wealdian layer.

What their age may be is an interesting problem which has not yet been solved by geologists.

Very few travellers, even professional men, ever think of visiting the palæontological portion of the museum of natural history in the same building. This is most unfortunate, for its collections are the richest we have ever seen, and of the greatest value for students of palaeontology and members of the medical and dental professions.

The first room is devoted to the age of polished stone. It contains a splendidly mounted entire skeleton of the mammoth elephas primigenius, almost a unique specimen. There are very few human remains, the most interesting of these are two portions of lower jaws ; one apparently belonged to a young adult. It contains several large well-formed teeth the dens sapientæ on the left side being unerupted and in a horizontal position in the ascending ramus. The other appears to have been the jaw of a much older individual; it bears only three molars, the whole of the crowns of which are worn away, leaving the thinest possible layer of dentine above the fangs.

In the adjoining room is the extensive collection of implements and remains found in the caves on the banks of the Meuse and its tributaries. Most of these belong to the age of cut stone. A large number of bones here found are broken into small fragments, but a sufficient number of unbroken ones were discovered to reconstitute the entire skeletons of many of the larger carnivora of this period. The human remains are more numerous than those of the subsequent age; they consist almost entirely of fragments of skulls, teeth and small bones. Among these are ,a portion of a lower jaw, a metatarsal bone and an ulna, which were found in a cavern called the Trou de la Naulette. They belonged to a contemporary of the mammoth and are perhaps the oldest human remains ever discovered. The lower jaw is remarkable for its slight depth and its great thickness and the almost entire absence of a mental prominence ; but its most peculiar feature, and in this respect it differs from any of the others, is the enormous size of the alveoli of the molar teeth, which increase from before backwards, the first being small and having only four root sockets, whilst that of the wisdom tooth is the largest of the three and has five root sockets. The collection of stone implements and carved or worked bones of the reindeer age would alone repay a visit.

Odontolcgical Society.—On the 1st Nov. eighteen of the leading dentists in Belgium met at the Grand Hotel in this city for the purpose of founding a dental society. The meeting were unanimous as to the urgent need of such an association, which was accordingly formed under the name of Sociéte Odontologique. A provisional committee was elected for the purpose of drawing up a code of rulês, to be submitted to a subsequent general meeting. One of the fundamental rules agreed upon was that no advertising dentist should be admitted as a member. The society appears to have a very prosperous future before it and ought to do a great deal towards raising the professional standing of dentists in Belgium. Three members of the provisional committee, it is understood, are foreigners so that the society at starting bears a cosmopolitan character which is a very good point in its favour and a proof that it will be conducted on the broadest possible system.

Brussels, November, 1884.

DENTAL CARIES IN NORMANDY.—A French journal gives the following statistics: Normandy supplies a number of recruits which are rejected. The Seine Inférieure, for example, furnishes a mean of 50 per cent. of rejected conscripts. This singular fact in so wealthy a department, in which the population seems strong and prosperous, has excited the attention of Dr. Chervin. He finds that the most frequent malady giving rise to rejection, after cases of "general weakness," which preponderate, is dental caries, which, taking the department altogether, furnishes 15 per cent. If the different cantons in the department are examined, a great diflerence among them is discovered, varying from 80 per 1,000 the lowest, to 229 the highest number. Pursuing his investigation of the department for twenty years, M. Chervin arrives at the conclusion that race is the chief cause of the predominance of caries. Examining one of the ethnic elements which is the most persistent, and which furnishes the most information on the subject of race-stature, he finds that the department is inhabited by two different races, the shorter in the east and the taller in the west. In the population of the higher stature, dental caries is far more frequent than in that of the lower stature; and this fact is not peculiar to the Seine Inférieure, but is observed also in other departments.

CHINOLINE, OR QUINOLINE, is an oily, mobile, translucent, liquid, soluble in alcohol, insoluble in water. It is either prepared from cinchonidine and quinine, or synthetically from nitro-benzol, aniline, glycerine, and strong sulphuric acid (Martindale's Extra Pharmacopœia). Of the salts the tartrate and the salicylate are mostly used.

British Journal of Dental Science.

LONDON, DECEMBER 1, 1884.

FATALITIES DURING THE ADMINISTRATION OF ANÆSTHETICS.

The public Press is just now teeming with cases of deaths arising in the course of the administration of anæsthetics. A careful study of those cases cannot fail to point a moral and teach a lesson, unhappily only too much needed.

In one case a Mr. Freestone, described as a chemist and dentist, of Bedminster, Somerset, administered the bichloride of methylene to a youth aged sixteen. According to our contemporary "The British Medical Journal," the administration was undertaken for the extraction of a single tooth. The vapour had been inhaled for a minute and a half, then the face piece, (what face piece is not mentioned), was removed, and the dentist endeavoured to replace the gag which had slipped. In this attempt he failed, as the teeth were firmly clenched. The pulse was found to have stopped. The patient was dead in spite of efforts at resuscitation. Commenting on the case, the Editor of the "British Medical Journal" writes: "As a general rule it would be wise policy for dentists to refuse to administer alone any other anæsthetic than nitrous oxide—even if that should ever be given without the presence of a skilled administrator, which is doubtful—and it should never be forgotten that the chlorine compounds among which of course is ranked the bichloride of methylene, are amongst the most unsafe of anæsthetic agents."

We endorse to the full our contemporary's remark, and while sympathising with the actors in this sad episode, we cannot but feel alarm, since, according to the evidence given at the inquest, the bichloride of methylene had been employed *several hundreds of times*, by Mr. Freestone for tooth extraction. It has now been fully ascertained that the preparation usually termed methylene or bichloride of methylene is simply chloroform diluted with alcohol, and so shares with chloroform, a terrible power over the cardiac muscle and cardiac nervous system. Methylene has enjoyed a high reputation for safety, on account, it is probable, of the high repute of those who have stood its sponsors. It is to be feared, that there exists a wide-spread belief that this agent possesses properties far removed from those of chloroform. It is this belief which induces many not specially engaged in the study or practice of anæsthetisation to incur a risk rendered doubly dangerous, because unappreciated. It is not generally known that deaths from methylene are now far from infrequent, indeed of late this drug has been brought into conspicuous pre-eminence. Under these circumstances, the most extreme caution should be employed by all in the administration of this agent. It is further to be urged that its use should be restricted to cases in which safer anæsthetics cannot be employed, and should then be given by one who feels that in his hands are resting the life and death of his patient, and that every precaution has been taken that special knowledge and special skill are able to place at the disposal of the patient.

A death from chloroform is reported from Derby, the victim was a boy aged eight, but particulars are at present wanting. *Apropos* of the administration of chloroform, it is to be noted that Mr. Maylard's paper on this subject has given rise to considerable discussion. That gentleman having alleged that massive doses of chloroform are commonly used in Scotland, where the open method is much in vogue. It is not for us to discuss the facts of the case, but rather to insist upon the point that chloroform given by the open method is certainly liable to dangers, save in the hands of the most experienced. It seems to us that the specialists in this department are incontrovertible when they say that no man, however conscientious, however painstaking, however erudite, will become a safe administrator of anæsthetics unless he is in daily practice. Practice of eye, practice of hand, power of concentration, and readiness of resource are essential attributes of the anæsthetist. These qualities may only be acquired by a long apprenticeship. And he who lacks such qualities endangers his patient's life, and his own reputation. These remarks must be heldto have reference in the main to the more dangerous anæsthetics, those being of the alcohol series. As we know that dentists employ anæsthesia as widely, or even more widely, than other surgeons, we are bound to urge upon them, the very careful consideration of this subject. Dentists, or at least those who are being at the present time turned out of their leading special hospital, enjoy advantages of instruction in anæsthetics greater than falls to the lot of the average medical student. Hence we should expect that dentists would be as keenly alive as any, to the dangers which beset the path of the amateur anæsthetist.

The dangers in the case of operations about the mouth, such as tooth extraction, are certainly increased by the locality. One hears not only of deaths from a so-called paralysis of the heart, which we fear in many cases at least means death from an *overdose of chlorofovm*, but of teeth slipping down the larynx. These occurrences, which may be remediable when assistance is at hand, must prove fatal when the operator is single-handed. It is a fatal error to say that as deaths are rare, danger is slight. Each time an anæsthetic is given it were a wise thought to hold that case as being the possible one of extremest danger. It is quite foreign to our purpose to advocate that only specialists should administer anæsthetics, we leave that as an open question which each practitioner will decide for himself.

The question hinges upon such wide and various conditions, and upon the diverse circumstances and environments of practitioners, that sweeping rules could not with justice be advanced. Probably all admit, upon the principle of division of labour and its outcome, specialisation of labour, that experts when obtainable, are best called in. On the other hand when they are not present, and so cannot be saddled with the responsibility of the anæsthetic, it is, we contend, of the last importance that the dentists should be upon the *qui vive* for all possible mischances, and should appreciate the onerous character of the responsibility under which they act.

CINNAMON BARK FOR TOOTH-ACHE. — In the *North Carolina Medical Journal*, April, 1884, Dr. J. R. Irwin writes that one of the best and most pleasant things that can be used to relieve this painful state of the dental nerves, is chewing cinnamon bark. It destroys the sensibility of the nerves and suspends the pain immediately, if the bark is of good quality. After repeated trials, and in different cases, he is convinced that it is generally as efficacious as any of the other remedies suggested for odontalgia, and not attended with the unpleasant consequences of creosote, carbolic acid, etc., which relieve the pain, but leave the mouth as sore and painful as the tooth was previously, though these results are usually due to carelessness in using.

TARTATE OF CHINOLINE IN PYORRHŒA ALVEOLARIS.—In the *New England Journal of Dentistry* a writer comments upon the use of antiseptics in the treatment of pyorrhœa. He has found hydrogen peroxide and corrosive sublimate unsatisfactory, and has had recourse to tartrate of chinoline. He injects into the pockets three times a week, and obtains "a complete closure and healing of deep pockets beside the roots of teeth."

FATAL CHOLOFORM-NARCOSIS. — The *Chicago Medical Examiner* records the following case. On Wednesday, August, 6th, at 3 p.m., a labouring man, 28 years old, presented himself at the office of Dr. D. A. K. Steele, to have a recent wound dressed. The middle and ring fingers of the right hand had been mangled and partially torn off by machinery in a planing-mill. Dr. Steele advised amputation through the second phalanges. As the patient was suffering from pain and shock, and was excessively nervous, it was determined to administer an anæsthetic. The man was lying flat on his back on an operating-table, within three feet of an open window. The anæsthetic (Squibb's chloroform) was administered by Dr. C. C. Berry, by means of a loosely-folded napkin, and the tension of the vapour was lowered by free admixture of air. At the expiration of ten or twelve minutes, anæsthesia was complete. Between two and a half and three drachms of chloroform were administered. The stage of excitement was marked, and the patient struggled violently; the pulse was rapid and compressible. When unconsciousness was fully established, Dr. Steele was about to begin the operation. Suddenly a long stertorous respiration was heard, the heart ceased to beat, the man became pallid, and breathing stopped. The pallor yielded to a dark venous congestion, which gradually faded away. Vigorous efforts at resuscitation were at once instituted. The tongue was drawn forwards by a pair of vulsella forceps, and artificial respiration attempted. The heart was directly irritated by a fine aspirating needle. All efforts were of no avail. Death had resulted from cardiac paralysis. At the necropsy, forty-eight hours later, the brain was found slightly congested; the lungs markedly congested, and slightly œdematous; the heart of normal size, with large deposit of fat upon and around the auricles, and fatty infiltration of the muscular fibres; the wall was thin and pale, the valves very thin and elongated; there was atheromatous degeneration of the coronary arteries and aorta. The aorta was slightly contracted. The kidneys, liver, and spleen were congested. The abdominal cavity contained about three ounces of bloody serum; the small intestines were hyperæmic. The man seemed at least ten years older than he really was. An examination of the heart, prior to the administration of the chloroform, revealed no evidence of organic disease. The heart was simply acting rapidly and feebly. No history of previous condition, with reference to rheumatism, drunkenness, or other predisposing cause, was elicited. Of course the coroner's verdict attached no blame to the physicians.

The editor observes that Dr. Steele deserves, and will receive, the cordial sympathy of the profession. Ether is the universally recognised anæsthetic in the United States, but there are many conditions which contraindicate its use. The so-called "English mixture" of 100 parts chloroform, 30 parts sulphuric ether, and 30 parts absolute alcohol, has won a well deserved reputation in the United Kingdom and Continental Europe as a safer anæsthetic than pure chloroform. The "English mixture" is, nevertheless, dangerous, and demands care and experience in exhibition. Four deaths, undoubtedly due to this agent, have been recently reported from Billroth's practice.

Abstracts of British & Foreign Journals.

ARCHIVES OF DENTISTRY.

Cases of Absorption of the Roots of the Permanent Teeth, by A. H. Thompson, D.D.S., Topeka, Kas.

The first case was that of a woman, aged 40. Her teeth were good in quality, but affected by salivary calculus. She had suffered from pyorrhœa—alveolaris ; there was chronic inflammation of the roots of the four upper incisors, and constant exudation of pus from them. She applied for relief with these teeth quite loose and in an advanced state of suppuration. The crown of the left central was apparently broken and was hanging by a slight attachment to the gum. The teeth were removed, and after the crown the root of the left central was taken out. Examination :—At the neck of the tooth, on the posterial wall, absorption of the dentine to the opposite wall had occurred. It passed around the pulp canal, and with the cementum attaching the cement and the secondary dentine in the pulp canal. This last extended from the ragged ends of the crown and roots like a tube, and contained the pulp. "Close examination of the eroded parts suggest that the process must have been a true absorption, by an absorbent organ," and not the result of chemical change. As to cause, it is suggested that, 1st: "The pathological condition of the gum and periostium, and the possibility of hypertrophy of the periostium giving rise to an absorbent organ.—2nd : The irritation arising from the internal occlusion of the inferior incisors, and their impaction against the walls of the upper incisors. In case 2 the left upper lateral incisor was at fault. It appeared that there had been a small fistula over the centre of the root years ago, the tooth being alive, necrosed alveolus was diagnosed, small scales of bones were found removed ; some months subsequently the tooth had become quite loose. The pulp canal was opened from below and devitalised, "about half way up the root, opposite the fistula apparently," the operator was "baulked by striking life, which seemed 'like the gum,' as the patient described it." A perforation was found. After about a year the patient appeared with the tooth sore and loose, the gum receding, the tooth was pitched forcibly towards the canine, leaving a space towards the central, and the gum over the root depressed and dark. The fistula would come and go. External applications were employed and the tooth wedged away from the canine. In two or three years' time the tooth was removed, the crown was found carved and dwarfed, and a supernumerary root on the distal side. "We can say that the pulp in this root dying (perhaps on account of the intrusion of the filling) caused the fistula at its apex half way up the length of the main root. Examination showed the apex rough, irregular, and partly destroyed by corosive action of the pus. At the apex of the supernumerary root, a depression due to absorption by an absorption organ? was found. The cause seems to have been malformation of the tooth, leading to the death of the pulp and the direct cause of the fistula. The necrosis of the alveolus absorption of the roots in the spot described, and recession of the gum leading to a true exfoliatien and effort of nature to be rid of the tooth.

ZAHNTECHNISCHE REFORM.

Vulcanized Pivot Teeth. Gustave Hahn, of Zullichau.

The method of preparing pivot teeth with caoutchouc backs was shortly mentioned some time ago in the "Zahntechnische Reform" and Herr Hahn, who has made use of the method for some time now, gives a full account of the process which he highly recommends. He speaks most warmly on the subject, giving it as his opinion that it surpasses the many different inventions brought forward for the satisfactory placing of pivots which have either proved ineffectual or have occupied too much time in manipulation to be of any use. The preparation of the above mentioned pivot tooth is quite simple. First the root when sufficiently prepared must be provided with a suitable pivot, and a careful impression must be taken. If the end of the pivot which projects from the root is slightly bent, round it will, after the removal of the impression remain firm in it and indicate clearly the direction for drilling. Over the whole a plaster model must be poured, for the purpose of fixing the pivots in their plates. After this has become hard, the teeth to be set are cut, fitting well on to the root and are soldered firmly on to the pivot which has been removed from the plaster model. When this is done the pivot tooth is put back in its proper place on the model and the imperfect contour restored. This can be done in two ways, the contour, may be modelled in gutta-percha, the whole put into the moulding tray and the work carried on by stopping with caoutchouc in the way it is generally done when a caoutchouc piece is fixed, or else Humm's method may be had recourse to in which the model is taken at once in caoutchouc instead of first taking it in gutta-percha and vulcanising.

After the vulcanising, the caoutchouc outline will remain clean and hard enough to polish, whereupon the tooth is ready to be set.

Unfortunately, pivot teeth very often will not remain sufficiently firm in their places, particularly when the roots are at all weak.

In order to avoid this, it is necessary to cut under the root with a drill. This in cases in which the root is strong may answer, but in cases of weak roots it is irrational, as it is quite possible the weak root may not be utterly useless although weak, which after such undercutting it must inevitably become. It is more advisable to cut a superficial winding screw into the root, which will not fail to give the weakest root sufficient firmness for the purposes of biting. There are many different opinions as to the shape of the pivots. Four-cornered, three-cornered, round, and cleft are the usual forms of these pivots. Herr Hahn has found the round shape preferable to any other, which he says will always keep firm in its place when provided with some shallow incisions or notches. In order to prevent the troublesome moving about of the pivot tooth, a slight tap of the mallet applied to the middle of the round pivot, by which the round will be levelled to the required position, and will entirely prevent any such movement occurring. It is unnecessary to say that before the teeth are placed the roots must be carefully cleansed.

There are numerous methods for performing this. The simplest and that most in accordance with nature's laws, is to syringe the roots well with warm water and disinfect with carbolized alcohol (2°/$_0$).

Opinions upon the last means of fixing the pivots in the roots vary as much as those concerning their shape. Herr Hahn recommends Eispelder's cement as being the most satisfactory on account of its extreme durability and strength, his experience being that whenever it has been used it has never been necessary to fix the pivots a second time after it has once been fixed.

GAZETTE HEBDOMADAIRE.

Contributions to the Study of Fibrous Tumours of the tongue.—On Fibro-myoma of Tongue, by E. Blanc, Interne of the Hospital of Lyons.

Fibrous tumours of the tongue are of very rare occurrence; only a very small number of well authenticated cases having been recorded. The disease usually affects the dorsum, and the anterior part of the organ, but very exceptionally the very base of the root of the tongue.

Our classical surgical treatises mention Pooley's celebrated case, which was first published by him in the American Journal (April, 1872). In this case the tumour sprang from the base of the tongue and caused suffocative attacks by continually lying over and so blocking the entrance to the larynx. The tumour ulcerated, and repeated attacks of violent hæmorrhage, set in which greatly reduced the patient.

Fith had seen a similar case in 1869, and was induced to publish it after reading an account of Pooley's. His patient was a young woman aged 30, who had complained for some time of a slight sore throat. On examining the fauces a small tumour was found of the size of a filbert. It produced no unpleasant symptoms and its very existence was unknown to patient. The tumour was situated in the middle line and so very far back that the finger could only be got behind it with the greatest difficulty. It was sessile and was removed in 1870 by Bigelow with an écraseur. On examination after removal, the tumour was pronounced to be a fibroma possibly of recurring nature. There was no recurrence however.

Duncan Gibb, in his treatise on "Diseases of the throat and air passages," records a case which occurred in his practice and in which he removed a tumour, as large as a marble from the left side of the base of the tongue. It had been the cause of great inconvenience to the patient and had given rise to attacks of suffocation through the tumour coming in contact with the epiglottis.

The following is an original observation and refers to a case which was admitted to the Hospital de la Croix, Bourse of Lyons, in November last. The patient was a miner, whose family and previous histories presented no special points worthy of remark. For the last ten years his friends have noticed some peculiarity in the tone of his voice, which had become very harsh and nasal. He complained of no dyspnœa or dysphagia and had never had any hæmorrhage from the throat. Of late he had been troubled somewhat with tickling in the throat, and occasionally with attacks of vomiting through the nose. His wife stated that he snored very loudly and was rather apt to start in his sleep.

On examination, a pyriform tumour of the size of an egg was seen in the pharynx. It lay with its base looking upwards and occupied a median vertical position. Its upper end reached up to the velum palati, which it pushed before it. From its right border sprang a wide fold of mucous membrane, which connected it with the tonsil. The tumour was but slightly moveable in all directions and was fixed to the base of the tongue by a wide pedicle. It was hard and incompressible, and was covered with a layer of very vascular mucous membrane. There was no enlargement of any of the glands.

A few days after his admission, Mn. Poucet removed about half the tumour by means of curved scissors. There was but very little hæmorrhage. Two days afterwards the patient insisted upon leaving the hospital, as he felt so very well.

The tumour was examined microscopically and was found to be a fibro-myoma with an abundance of fibrous tissue, and a large number of cells.

The patient returned five months afterwards and stated that three days after leaving the hospital, he had a violent attack of inflammation in the neck which came on quite suddenly and was accompanied with great swelling and a deal of pain. During a paroxysm of coughing he brought up a large fleshy mass, not pedunculated, of a greyish black colour, smelling most offensively. From that day forth all his symptoms seemed to disappear. A local examination of the mouth five months afterwards showed a perfectly normal state of matters, and revealed no sign of the tumour except a very slight cicatrix. The patient was in perfect health, and suffered no inconvenience in breathing, speaking or swallowing.

This case seems remarkable on account of the slow growth of the tumour and the absence of any functional disturbance of the throat or air passages, a circumstance we must ascribe no doubt to the absence of a pedicle.

Though the number of hitherto recorded cases of fibrous tumour of the tongue is so very small, they appear to be separable into two classes: those which grow very slowly, and cause no functional disturbances of any kind; 2° those of a more rapid growth, which may at times necessitate very hasty surgical interference—in other words, into simple, or benignant, and malignant fibrous tumours.

The structure of the tumour in this case, reminded one very forcibly of that of rasopharyngeal polypi, and the microscope revealed the presence of smooth nonstriated muscular tissue. The tumour in this case was thus a fibro myoma, a kind of tumour, we have not seen mentioned as occurring in the tongue.

CORRRESPONDENZ BLATT.

CAUSES OF CHANGES IN THE ANGLES OF THE LOWER JAW, by ANTON WITZEL.

In toothless jaws, both in early childhood and advanced age, the jaw-bones are apt to become very weak; in adults with complete rows of teeth the inclination is towards the right angle. Baume, in his "Lehrbuch der Zahnheilkunde," gives it as his opinion that the causes of these alterations are to be sought for in the circumstances of the development of the teeth.

Herr Witzel says—the angle of the inferior maxilla becomes smaller and smaller from the beginning of its development. When the wisdom tooth breaks through, this angle is at its smallest, from this time it gradually as time goes on and the teeth are in constant use, becomes again more open.

The size of this angle increases very rapidly, if, as is generally the case, the molars are injured by caries. Through the constant pressure of the masticating muscles the angle very soon becomes stretched after the loss of the molars, which afford a firm support as long as they last. How easily a bone is altered through constant though light pressure, and can even be brought to resorption, we see by the fact that the slight pressure of an aneuryam of the aorta is sufficient to erode through the sternum. And just as easily can the lower jaw be stretched through the sometimes very considerable pressure of the masticatory muscles, as soon as their supporters the molars disappear.

The well-known fact that the angle of the lower jaw has a tendency from the beginning of its development to approach the right angle has been already mentioned. First the milk incisors break through; afterwards, the pressure of the masticatory muscles is prevented by the meeting of the milk incisors. With the cutting of the milk molars a new support is offered to the lower jaw, which becomes more arched as these teeth push their way farther through the alveolar ridge. At the ages of 6, 14, and 20, the support of the under jaw is thrown farther back, on account of the cutting of molars which takes place at these periods, the consequence of which is that the jaw becomes more and more bent through the pressure of the masticatory muscles. This bending of the jaw ceases when the wisdom teeth are quite through, but after that, the continual use of the teeth is sufficient to cause a slight stretching of the jaw, which stretching reaches its greatest extent when all the teeth are gone. From these observations we learn how wisely and correctly nature carries on her operations with regard not only to the cutting of permanent teeth, but also temporary.

Suppose, for instance, that all or a great number of milk teeth should fall out at the same time, and before the permanent molars should have appeared to serve as supports to the jaw, the lower jaw would immediately become violently stretched and this would certainly injuriously effect the development of the coming teeth.

DEUTSCHE MONATTSCHRIFT FUR ZAHNHEILKUNDE.

STOPPING OF CARIOUS TEETH WHEN PULP IS DEAD.

According to the opinion of Schneiter, the only chance of success in the treatment of decayed teeth is to remove all decomposed matter from the roots, and to fill them with matter which will not decompose. He uses iodine and cotton wool.

The method of treatment may be divided into two parts, according to whether the use of the nerve extractor is sufficient or whether the root drill is necessary. In the one case the remains of the pulp are not yet completely destroyed and the gangrenous root fang can be removed with a nerve extractor. Here after first syringing the root with corrosive sublimate solution a consequent reaction of the neighbouring parts will quickly disappear. If the pulp is decomposed the Marey drill is the best instrument, in order whilst syringing with a suitable Prevaz canal syringe to empty the contents of the canal, only a slender drill must first be used and a stronger may follow. The stopping is first carefully done with iodized wool, the expedient can be repeated till a firm stopping is ensured and the wool will remain unchanged after long use. Some weeks must elapse before the filling of the crown can be attempted. Schneiter showed a nicely prepared enamel block, and demonstrated the expedient and the case for five to six teeth being stamped out of a piece of platina on the palate plate. For stamping he uses Talbot's layer and in enamel working for the firm holding of the teeth, platina wire. For the disinfection of the instrument corrosive sublimate solution of 1 : 1000 is recommended. Ringing in soapy water is necessary as by long delay the edges of the instruments would be injured.

Literary Notices and Selections.

DEATH FROM CHLOROFORM, ACCOMPANIED WITH UNUSUAL SYMPTOMS, by A. ERNEST MAYLARD, B.S., Lond.

Extra-Dispensary Surgeon to the Western Infirmary, Glasgow.

(*Concluded from page* 1072.)

The peculiar normal hue of the cheeks and lips, notwithstanding the cardiac cessation, must receive their explanation from one of two causes—either there was paralysis of the sympathetic, whereby the small arteries and capillaries failed to empty themselves, or the highly oxidized condition of the blood within the veins induced them to give the skin the ordinary appearance resulting from arterial supply. Although one is fully justified in assuming that the blood, after the rapid respiratory acts, was in an apnœic condition, it seems feasible to suppose that the very same influence which had deranged the cardiac nerved mechanism had also produced a like effect upon the nerve mechanism of the blood vessels. I use the more general term "nerve mechanism" because it involves too much theoretical reasoning to attempt—in the absence of any careful *post-mortem* examination—to differentiate between the possible influences invoked through the medium of the cerebro-spinal centres on the one hand, or directly through the organs themselves on the other. Thus, to have found the cardiac cavities either all empty or all containing an equal quantity of blood, or one side empty and the other distended, might have helped toward some reasonable solution. The rapid pallor which usually ensues in nearly all cases of primary cardiac failure, would seem to be due to a spasm of the vasomotor nerves causing the arteries at once to empty their contents into the veins. It is not unlikely, too, that the cessation of the heart may similarly be produced by spasmodic action. So one cannot help feeling that an examination of the heart in the present case might have thrown some light upon the peculiar pink colour of the lips. To have found the heart uniformly distended with blood would have supported the theory that both the cardiac and vasomotor centres in the medulla had been paralyzed.

The return of the "gasping" after a short interval of artificial respiration is a point of interest. The explanation must rest upon the condition of apnœa induced by the rapid respiration. The blood being surcharged with oxygen there was no need for inspiratory efforts ; but as soon as deoxydization had taken place the respiratory nerve centre was stimulated and the "gasps" ensued. If this be the true explanation, then it shows how much more deeply and sooner the cardiac nerve mechanism was affected than the respiratory. With the light thrown upon the subject by the well known experiments of Dr. Snow upon animals, where a concentrated atmosphere of the anæsthetic produced death by primary cardiac failure, and a dilute one by primary cessation of respiration, it would seem that our conclusion was a correct one, and that death was principally caused by an overdose of chloroform concentrated or accumulated in the system in a short space of time.

The gradual, but finally extensive, dilation of the pupil seems a sign more of impending death from any cause than indicative of any special one. The last case of death from chloroform which I witnessed under the hands of an old and experienced surgeon, was one where the respiratory troubles gave rise to the most prominent symptoms, and here, also, the pupils became rapidly and widely dilated.

Stress is attached by some surgeons to the importance of watching the colour of the lips. There is no doubt that in most cases they become at once anæmic on failure of the heart's action; but, as has already been mentioned, the present case gave not the least indication of any such event having happened. The lips, at first pink, passed gradually into a livid condition, presenting at no time any peculiar pallor. The ensuing lividity seemed to result from the tilting of the body.

I feel I trench on delicate ground in attempting to raise any objection to the conventional towel method of administration—a method which consists in folding an ordinary towel into a square, and pouring into the centre of it an unmeasured quantity of chloroform. It has done such good service for so many years without, perhaps, more fatal, or more successful results than have occurred with other methods that one naturally feels some hesitation in venturing to raise any objections. Nevertheless, with all due deference to those who still use it, and believe it to be the best means of administration, I feel forced to the opinion that there is an air of clumsiness about it in appearance, and undoubtedly often a carelessness in application. It was originally introduced by Mr. Syme, and used extensively both by him and Sir Joseph Lister. The latter, however, has for many years discarded it, and in its stead used the corner of a towel neatly pinched up so as to form a hollow receptacle, in size just sufficient to cover the nose and mouth. This is an extremely simple method, always at hand, readily allows a perfect and constant observation of the patient's face and respiration, and permits but the application of a very small quantity of the anæsthetic at a time.

The folded towel, when first introduced, was no doubt used with many precautions as to quantity of chloroform poured on the towel, position on the face, and so on, but time seems to have lessened the cogency of these directions, and one now sees the anæsthetic poured on to the cloth from a large twenty-ounce bottle by a "rule of thumb" process; the quantity not unfrequently being sufficient to flow off the towel and over the administrator's hands. One finds amongst the old directions as to the place of the towel on the face that "care should be taken that free space is afforded for the access of air beneath its edges." Yet how often is this neglected, and the patient's face completely shut in, except at the front part. Again, the extent to which the face is covered is another very variable factor in the process of administration. One man will have a well-arched space beneath the towel, while another holds it almost flat upon the patient's face; one will hold it low enough to expose the eyes and obscure the mouth, while another will do the opposite. These are all points possibly of little moment to the experienced administrator who, with a perfect knowledge of his agent, varies the conditions according to requirements; but to the student, who will probably never attain extended experience, anything which fails to convey in so important a subject the most complete perspicuity and precision is bound to be fraught with more or less danger. That there is an air of indefiniteness and carelessness often evinced in this method of administration one feels convinced, and for that reason alone it seems justifiable to reject it as a method to be taught.

The simple plan adopted by Sir Joseph Lister does away with many of the above difficulties and dangers. The towel being held by one hand the other is at liberty to feel the pulse (radial, facial, or temporal), examine the eye, or withdraw the tongue. Instead of the large chloroform bottle, so awkward in every way, the administrator can carry a small measured drop-stop bottle, provided with a hook and hung to a button hole. With the free hand the anæsthetic can be easily dropped upon the cloth at any time and to any extent.

The bearing which this question of method of administration has upon the case at issue is not without weight. The house surgeon, a man of much experience, exercising at all times the greatest care, and trained under a most esteemed surgeon, commenced administering the anæsthetic as he had done scores of times previously. If now, instead of the usual half ounce of chloroform poured upon the square folded towel and placed over the patients's face, there had been from one to two drachms sprinkled on the towel-end, it is just possible our patient might not have succumbed. The quantity would likely have been too small to have accumulated within the system and paralysed the heart. Whether this be so or no, it does not alter what one feels to be the principal consideration, that as soon as the patient begins to breathe in that rapid and abnormal way seen in our case, the wisest plan is—no matter what the method of administration—to remove the anæsthetic at once.

Turning now to other conditions which may be readily acceded as having conducted indirectly to a fatal issue, it seems not unreasonable to assume that the man's constitution must have undergone marked changes during his residence in hospital. His face, indeed, seemed to indicate this. According to the report taken at the time of his admission he is described as "a strong, healthy looking man," while as seen recently, his face had grown much thinner, his cheek palish, and his whole countenance presenting the appearance of a delicate constitution. He was, however, according to his own feelings, in good health, taking his food well, being generally of a happy and cheerful disposition. Thus, then, we have a strong, able-bodied man, actively engaged in labour, suddenly put upon his back for about two and a half months, and for a month longer capable only of the slightest movements. It is impossible to conceive but that all those organs, which in a young man were probably augmented in size from functional activity, must have suffered very materially from this sudden change in mode of living, and that very probably fatty degeneration and infiltration would be the predominating pathological process alike in nerve and muscle tissue. Whether any such organic change had actually taken place or not we were, unfortunately, unable to determine. Much as we desired and endeavoured to obtain a *post-mortem* examination, the patient's friends remained obdurate, so that whatever may be our conclusions as to the possibility of extensive fatty changes they can only be conjectural.

Finally, then, we are reduced to these two alternatives—either that the patient died from the effects of an overdose of chloroform, pure and simple, or from chloroform acting upon a greatly enfeebled heart, brought about possibly by fatty degeneration and infiltration of nerve and muscle tissue.

I would conclude this rather long article with the three following questions, leaving every thoughtful surgeon to endeavour to answer them for himself.

First, Have our patients, from some cause—possibly fear, created through meddlesome interference and prejudicial publicity rendered upon the subject by misguided, though often well-meaning, lay members—become more susceptible to the influence of the drug? *Second*, Is the constitution of chloroform the same at the present time as years ago? *Third*, Is our method of administration free from all possible blame?

Glasgow Medical Journal.

HERBST'S NEW METHOD OF FILLING TEETH, By Dr. W. D. MILLER, Berlin, Germany.

The method of inserting gold fillings strenuously advocated by W. Herbst, of Bremen, during the last half decade, is sufficiently well known to the profession to render a detailed description unnecessary. This method is especially characterised by two features. The first of these is the extensive use of the matrix for approximal cavities, the second the employment of a rotating, smooth-pointed instrument for condensing the gold.

The operation may be best made clear by describing a case in practice. We have to fill the left upper bicuspids, both decayed on the approximal surfaces. The cavities are opened to the grinding surface and prepared as for inserting a cohesive foil filling, with exception of retaining points, which are never made. The matrix is now brought into place, and the point of a steel pin inserted between the matrix and first bicuspid from the buccal side, and if necessary from the lingual side also, so as to press the matrix tight against the surface of the second bicuspid at the neck; warmed shellac is now packed into the cavity of the first bicuspid, to hold the matrix firmly in position. After the cavity of the second bicuspid has been filled, the shellac and matrix are removed a second higher (wider) matrix inserted and pressed by the same means as before tight against the surface of the first bicuspid, which is then ready for filling. Should the second bicuspid be wanting, then the matrix is held in position by filling the whole space between the first bicuspid and the first molar with shellac. The matrix being in position, three or four cylinders of Wolrab foil No. 2, 3, or 4 (or an equivalent of Wolrab foil No. 4 made into pellets) are brought into the cavity just as they would be into a simple cavity on the grinding surface, and fixed into position by pressing tightly upon them with one of the larger burnishers of the set, slowly rotating. It is then condensed by a succession of strong taps or pressures of the rapidly rotating instrument No. 5.

(The surface of the instrument soon becomes coated with gold, which must be removed by pressing it while rotating upon a piece of pure tin.)

This is then followed up by an ordinary hand plugger, to ascertain whether the gold has been properly condensed at all points. The above process is repeated till the operation is completed, the surface of the gold at last being thoroughly condensed by means of one of the smooth polished instruments of the set.

In filling large cavities on the grinding surface, first two, three, or four cylinders of No. 1, 2 or 3 Wolrab foil are pressed against the bottom of the cavity with the pliers, and then with one of the *polished* instruments, *slowly* rotating, fixed in position ; if it does not at once become firm, more gold is put in till it does ; it is then condensed with No. 5, *rapidly* rotating, and this instrument is then used almost exclusively till the gold is all in ; then No. 1–4 or 7 is used for condensing the surface.

Approximal cavities in the central incisors are treated as follows (previous separation by means of cotton having been secured) : The cavities are prepared slightly broader at the bottom than at the opening ; no retaining points are required. Two or three cylinders of No. 2 Wolrab foil are pressed into the first tooth towards the gums, likewise into the second tooth, and condensed with No. 5 ; this process being repeated till both cavities are overfilled, so that the gold in the two filling appears to form one continuous mass.

Then No. 15 (a clean, fine neeedle), slowly rotating, is pressed through between the filling at different points, and the separation completed with a fine file. The fillings are then further condensed by Nos. 12–14, rapidly rotating, with interrupted pressure.

The advantages claimed for the Herbst method are : 1st. Rapidity of operation. This comes particularly into account in proximal fillings, which can be inserted in much less time than is required by either the hand or electric mallet.

2d. The injuries frequently done to frail tooth structure, as well as to the pericementum by the use of heavy mallets, of course are entirely avoided.

3d. The equally baneful necessity of weakening or sapping a tooth by large retaining points is also done away with.

4th. The operation is less disagreeable to the patient than that by the mallet method.

Perhaps the most valuable feature of any method is the ability to produce by it fillings which shall be perfectly adapted to the walls of the cavity, and in this respect the Herbst method seems to promise success.

A number of fillings made by Herbst, with the time occupied in the insertion of each, were sent to me with the request that I would give them a thorough examination. For this purpose I caused similar fillings to be inserted in the same time by the hand mallet and by Telchow's Pneumatic Mallet. The teeth were then immersed in an alcoholic solution of fuchsine and allowed to remain twenty-four hours; at the end of this time they were split, and it was found that Herbst's fillings had resisted the penetrating power of the liquid better than the others : *i.e.*, they made better contact with the walls of the cavity than those inserted by the other methods. Herbst makes use of gold cylinders prepared by Wolrab in Bremen, a preparation which works, in the words of an old operator, "like mush."

How far his success is to be ascribed to the admirable qualities of the gold I do not know, nor is it possible to say how his fillings will stand the test of time.

This much, however, we may safely say, that his method has shown itself to be deserving of a thorough investigation, and it is particularly desirable that American operators should make themselves acquainted with it.—*Independent Practitioner.*

Dental News.

STUDENTS' SOCIETY OF THE DENTAL HOSPITAL OF LONDON.

ORDINARY GENERAL MEETING, HELD NOV. 10TH, 1884.

E. LATCHMORE, Esq., L.D.S., Vice-President, in the Chair.

The minutes of the previous meeting were read and confirmed.

Messrs. J. F. Colyer, J. Mansbridge, A. F. Croucher, A. E. Baker, and F. H. Vanderpart, having been proposed at the last meeting, were unanimously elected Members of the Society.

Casual communications were brought forward by Messrs. Hern and Pedley. The former gentleman introduced to the meeting, a special form of lower molar forceps, devised by himself, and so adapted that by pressing on a thumb plate increased pressure could be easily brought to bear in driving the instruments downwards; at the same time remarking that $\frac{1}{32}$ of an inch in grasping a tooth would make a great difference between success and failure. The latter gentleman showed forceps specially designed by himself for the treatment of fractured jaws; also pliers with novel blunt ends, eminently suited for wiring in the fixing of Hammond's splints; and described very interestingly a case recently treated at Guy's Hospital, in which they had been used most successfully, and stated that in his opinion it was doubtful if success could have been obtained without the use of them.

The Vice-President next called on Mr. Sexton to read his paper on "Stomatitis." At the finish of the reading the Vice-President invited a discussion on the important subject, and commenced himself by drawing attention to several points in the paper. He was followed by Messrs. Pedley, Stainer, Richards, Woodhouse, Read, Gabriel, and Buckland. At the close of the discussion Mr. Sexton replied.

A cordial vote of thanks was proposed by the Vice-President, and seconded by Mr. Gabriel, to Mr. Sexton for his excellent paper.

The Vice-President then announced that the next meeting would take place on the 2nd Monday in December.

Correspondence.

TOOTH STOPPING IN GENERAL HOSPITALS.

To the Editor of "The British Journal of Dental Science."

SIR,—Will you permit me, as one holding an appointment as hon. dentist to a general hospital, to offer a word on the question raised by Messrs. Benham, Sewill, and Hutchinson in the "Lancet," and referred to in your editorial columns for November 15th, as to the introduction of stopping operations into general hospitals. To me there appears to be practical difficulties to such a course, amounting almost to absolute prohibition. Dentistry, more perhaps than any other branch of medical or surgical practice, is a distinct and separate speciality. It requires, more than any other medical or surgical speciality, a distinct special apparatus of its own—operating chairs, instruments, appliances, in short, a specially furnished operating room, for its effective practice. These special conveniences a hospital established for general medical or surgical treatment does not, nor can it be expected to, provide, and without them how can an operation so delicate and trying as a proper filling be attempted? Let any practical dentist consider for a moment the exacting requirements of stopping operations even under the most favourable circumstances, the sustained, minute, and concentrated attention, the constrained attitudes, the difficulties of light in so confined a space as the mouth, and he will at once perceive how impossible it must be to perform the operation successfully with only such conveniences as a general hospital can reasonably be expected to provide.

Again, though no doubt a less important objection, there is that of the time required for stopping operations. No dentist in ordinary private practice could afford the time necessary to introduce stopping in his hospital practice. To be sure, as Mr. Sewill suggests, this might be met by appointing several dentists to each hospital; but the real force of this "time" objection lies in the consideration that it would scarcely fall in with the arrangements of a hospital, primarily existing for the treatment of general disease, to have so much of its time monopolised by its dental attendants.

Perhaps a time may come when dentistry will hold a more important place in general hospital practice, and when greater facilities may be there afforded to it; but for my part, I rather look for the remedy for this state of things to a larger development of the dental hospital idea, and the remission of all specially dental cases, from the general hospitals to those established for their special treatment.

Meanwhile, however, I would add, that in my opinion there is by no means so great an evil perpetrated in the present practice of almost exclusive extraction in general hospitals as may be imagined. Many of the cases are those in which the dental mischief is dependent upon, or connected with graver complications affecting the general health—cases in which the dental attendant is called in to assist his medical colleagues on the staff, in removing teeth which are acting as irritants and as obstructive to the treatment of these graver complications, and in which immediate extraction is necessary. As regards the specially dental cases, generally the mischief has advanced so far before it comes under the dentist's notice as to have rendered extraction the only feasible treatment. Patients very rarely attend a general hospital for their dental troubles, till the trouble has become considerably severe and complicated, and till all practicable chance of saving the offending teeth has passed away. Hence even under the present system, there is not the reckless and indiscriminate sacrifice of teeth capable of preservation which is assumed.

I am, your obedient servant,

ALEX. HUME.

(Hon. Dentist Clinical Hospital for Women and Children, Manchester.)

Nov. 20th, 1884.

To the Editor of the "British Journal of Dental Science.'

Dear Sir,—Although the editorial article of the last number of your Journal is somewhat strong, still it must be admitted that there is reason and truth in its statements.

I am a member of the Dental Association, and attended both the last General Meetings at Plymouth and Edinburgh; that I was disappointed I must confess, perhaps I expected too much, but at all events, if the members I met on those two occasions are the *most* reputable of our profession, then I am very sorry indeed to hear it; but at the same time must beg to state that, in my humble opinion, such is not entirely the case. However, I am sure that for gentlemanly behaviour and courtesy I have met their equals in the profession outside the Association. I agree with you that Mr. Canton's expres-sion, "unqualified," is ill-chosen. When such a term is applied to men who have had forty or fifty years dental experience, and were educated in the old-fashioned way, it savours of scant courtesy especially should it happen to come, as it might, from a chemist who had qualified as a dentist within the last few years. I would strongly recommend our would-be lights to endeavour to mend their manners in this respect, and when speaking of the many undiplomaed gentlemen in our midst, to make use of a more courteous term than the incorrect one of "unqualified." Such language, though possibly it may help in an infinitesimal way to bolster up the individual who makes use of it, does not help to induce that kindly feeling that should exist among us.

I see in the last edition of the Association Journal a hint thrown out to practitioners of Brighton to form themselves into a branch. Why the association counts so few members from that important town is singular, but could more of our fraternity from the South Coast watering-places be persuaded to join, it would add largely to our reputation, and much of the sting of your reproach, that the Association is not representative, would be got rid of.

Your obedient servant,

Y. Z.

To the Editor of "The British Journal of Dental Science."

Sir,—I have lately been endeavouring to make gold stopping in the manner suggested by Dr. Herbst, *i.e.*, with certain rotating points affixed to the ordinary machine. By using the point called "G," you are supposed not only to condense the gold but to leave the surface "splendidly cohesive," so that there should be no difficulty in building up the tooth to any extent. I have carefully followed the instructions, and find the gold well condensed, but with a surface bright and polished, so that to add more gold is next to impossible. Have any of your readers succeeded in this style of stopping, and if so can they point out how it is I fail in the use of point "G?"

I enclose my card for your own information but beg to subscribe myself

A Constant Reader

London, November, 1884.

APPOINTMENT.

Hutchinson, S. J., M.R.C.S., L.D.S., appointed Lecturer on Dental Surgery and Pathology in the London School of Dental Surgery, *vice* Alfred Coleman, F.R.C.S., L.R.C.P., L.D.S., resigned.

North Devon Infirmary.—Mr. Edward Brown, Dental Surgeon, Barnstaple, has been elected Hon. Dental Surgeon.

VACANCIES.

Dental Hospital of London and London School of Dental Surgery, Leicester Square.—Demonstrator of non-cohesive fillings. Salary, £50 per annum. Applications by December 8th.

St. Bartholomew's Hospital.—Dental Surgeon and two Assistant Dental Surgeons. Applications by December 5th.

BOOKS AND PAPERS RECEIVED.

Lancet; British Medical Journal; L'Odontologie; Pharmaceutical Journal; Dental Cosmos; Zahntechnische Reform; Independent Practitioner; Progrès Dentaire; L'Art Dentaire; Chemist and Druggist: Dental News; New England Journal of Dentistry; Monatsschrift des Vereins Deutscher Zahnkunstler; Dental Luminary; Gazette des Hospitaux; Southern Dental Journal; El Progreso Dental de la Habana L'Odontologia; Pharmaceutical Journal; Dental Headlight; Items of Interest; Centrallblatt fur Zahnheilkunde; Ohio State Journal; American Journal of Dental Science.

British Journal of Dental Science.

No. 406. LONDON, DEC. 15, 1884. Vol. XXVII.

SOME ACCOUNT OF THE NEW LOCAL ANÆSTHETIC,

By Dudley W. Buxton, M.D.,B.S., M.R.C.P., Administrator of Anæsthetics at the Hospital for Women, Soho Square.

There has been, during the last few weeks, much mention made of a new local anæsthetic. It has appeared likely to prove serviceable, if the gist of these "many worded speeches" were epitomied and presented in an accessible form. Criticism upon a usage so novel must prove futile, time and trial will inevitably furnish the truest judgment, and in this case we may safely leave the issue to these arbitrators. That novelty begets enthusiasm, is as trite as it is true, still novelty of usage in the case of Cocaine is accompanied by safety, so that no apprehension of harm following its use need exist. There have been many attempts made to produce a sufficient and pleasant local anæsthetic, but we can hardly assert that any have borne out the flourish of trumpets which heralded their début.

Cocaine was first so called by Dr. Albert Niemann, of Goslar (1860). It is an alkaloid, derived from the *Erythroxylon Coca*. It has been known for some considerable time although only recently placed prominently before the professional world. Gadeke lays claim to having first derived the alkaloid from *Erythroxylon Coca* although as far back as 1853, Wackenroder* and Johnston expressed their belief that an active alkaloid resided in its leaves. Of the preparations at present known, the hydrochlorate, the tannate, sulphate, nitrate, and oxalate are best understood.

Cocaine occurs crystalized in colourless prisms with four or six sides. It is soluble in alcohol and also, although to a less degree, in water, its watery solution possessing an alkaline reaction. Acted upon by acids it becomes changed and decomposed. It is unfortunate that this alkaloid occurs in most minute quantities, only being, it is said, present up to 2°/₀ in the leaves of even the best yielding plants.

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*See *British Medical Journal*, November 29th

Dr. Kœnigstein, whose researches were made independently of Dr. Koller, confirms the latter's results. He speaks of a marked exophthalmos occurring in Cocainised eyes and dwells upon the marked constriction which takes place in the vessels of the eye, even he is inclined to believe in those of the retina. In frogs, *et cœt*, he has found a marked contraction of the vessels to occur in the case of the tongue, intestine and liver. With 10°/₀ and more the palpebral conjunctiva and even the skin of the eyelids became insensitive. The only inconvenience which accrued from using so large quantities was a burning pain over the Cocainised surface. In a subsequent communication made to the same Society by Dr. Julinck, cocaine was stated to be a valuable local anæsthetic when applied to the mucous membrane of the pharynx, mouth and larynx. The powder applied produced insensibility to pain, lessening of reflex excitability, while sensation of heat, or touch was deadened or abrogated. For operations on the larynx, when slight, he employed 10°/₀ solution in alcohol, when more severe he used 20°/₀ of the hydrochlorate of of cocaine. The pharynx was mopped while application to the larynx was obtained by means of a thick soft camels' hair brush. Anæsthesia persisted from 10 to 15 minutes. In some cases repeated applications were made.

The results at which Dr. Karl Koller* had arrived were presented before the Society of Physicians, of Vienna. They are as follows:

1. One or two minutes after putting a few drops of a 2°/₀ solution of the chloride of cocaine on the cornea and conjunctiva; both these structures became wholly insensitive and remained so for 10 minutes—reflex phenomena were also in abeyance.
2. Dilatation of the palpebral orifice also supervened—attributed by Dr. Koller to the absence of the usual sources of irritation.
3. The palpebral and ocular conjunctiva became anæmic.
4. Mydriasis appeared 15 minutes after the application.
5. Paresis of accommodation appeared with the mydriasis and left with it.
6. Repeated applications every 5 minutes caused more deep anæsthesia, so that deep pressure was painless.
7. No irritation followed its use.

Applied therapeutically for the relief of painful ocular disease it proved highly efficacious. Thus photophobia, syndesmitis lymphaticæ and corneal erosions were relieved by it.

Dr. Koller recommends 5°/₀ for effecting anæsthesia during eye operations. He has performed iredectomies, extractions, removals of foreign bodies from the cornea, tattooing the cornea, with its aid, and has found these operations were then carried through without pain to the patient. The Cocaine was applied every one and ahalf minute, but without any untoward result. A departure in the mode of application of Cocaine is mentioned by Dr. Kœnigstein, who, in nucleating an eye first rendered the conjunctiva insensitive and subsequently injected some of the solution into Tenon's capsule.

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* *Opthalmic Rev.*, vol. III., No. 36. *Medical Times and Gazette* Nov. 8th.

In Laryngoscopic examinations, Professor Von Schrötter finds cocaine highly serviceable. He has also succeeded in removing warts and other growths from the larynx and finds such operations may be considered practically painless when hydrochlorate of cocaine is previously painted over the area of operations. Professor Störk's experience coincides with that of Professor Schrötter, although he seems to think that loss of reflex irritability is not complete.

However* Messrs. Johnathan Hutchinson, Nettleship, Marcus Gunn and Benson, find cocaine of less value in ophthalmic surgery, than Dr. Koller's description would lead us to infer. Dr. Semon employs a 20°/₀ solution of cocaine for laryngoscopy and for operations about the larynx. And Mr. Butlin† gives a personal experience of two operations performed upon him by Dr. Semon. In one of these the turminate bone was burned by a galvano-cautery, no anæsthesia being employed, with a result that great and prolonged suffering ensued·

The next operation was performed after the nasal mucous membrane had been twice painted with the hydrochlorate of cocaine of a strength of one in five. Mr. Butlin's sensations were then no longer painful, it was simple tactile feeling, analgesia was perfect.

Although some English ophthalmic surgeons seem less favourably disposed towards cocaine than are their German confrères, yet in the hands of many, Cocaine has fully maintained its prèstige, Thus Mr. Henry Power, writing to the *Lancet*, November 29th, says, " On the whole I am well satisfied with the effects produced and consider that it (cocaine) will prove oi the greatest benefit to those who are old and infirm, or who from any other reason object to the use of chloroform or ether." This surgeon has performed iredectomy for glancoma, operation for squint, and for cataract painlessly by employing this local anæsthetic.

Among laryngoscopists Dr. Prosser James speaks well of this alkaloid and in the main supports the position which, as has been indicated above, has been assumed by Professor Von Schrötter. Nor can the advantages of cocaine be dismissed after considering the uses assigned to it by laryngoscopists and ophthalmic surgeons. It has a wider field of use and one it is likely which will ere long, be considerably increased in latitude. Already its anodyne qualities have been spoken well of by Dr. Murrell and others. Dr. Murrell has used hypodermic injections of half a grain in cases of sleeplessness, and he avers this practice has been followed with encouraging results. In treating supra-orbital neuralgia cocaine has in his hands proved eminently successful. The benumbing effects of cocaine has also proved of service in uterine diseases, as it enables digital examinations and prevents the pain attending local treatment by lunar caustic *etcæt.* In minor surgery, the opening of subcutaneous abscesses, cauterising and so on, are, it is found, capable of being performed with little if any pain to the patients.

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*Report of the Ophthalmological Society, October 9th.

†*Lancet*, Nov. 29th.

Upon due consideration, there can be no question that Dr. Koller and Kœnigstein have conferred a vast boon by adapting to the uses of local anæsthesia the alkaloid cocaine. In eye surgery, as in the surgery of the nose, pharynx and larynx, the advantages of the employment of cocaine are now beyond the region of doubt. In clinical medicine it has been pointed out that for purposes of diagnosis much assistance may follow its use, while in the domain of general surgery a great increase of its scope will doubtless arise. It has been suggested that stricture of the urethra may be usefully treated by local application of a preparation of cocaine, while "irritable bladder" presumably would be remedied by its employment as a washing out solution. In the various forms of neuralgia, whether pleuritic or in association with the fifth pair of nerves cocaine proves of some use, however, further experience under these aspects is needed before any positive conclusion can be arrived at.

In dental practice cocaine will probably prove itself of service, as there are very many of the less severe tests of a patients' fortitude than is extraction of a tooth, which are sufficiently painful to need a local analgesic. To these cocaine commends itself. The mode of application is either to employ a solution in alcohol of 1 in 5 or stronger, painting the gum, or to inject the submucous or subcutaneous tissue with a solution. The toxic effects of this alkaloid are at present ill understood. It has been recommended in doses* from gr$\frac{1}{2}$ to gr 2, although as much as twenty-two grains have

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***British Medical Journal*, November 29th.

been swallowed without any bad results. Sleep is obtained with gr 2 taken, and some observers assert that as a hypnotic cocaine succeeds when others fail. In employing this drug one point of importance has to be kept well in view, and that is, that cocaine manifests far from uniform behaviour in different individuals. While in some persons it is powerfully anodyne and efficiently anæsthetic, in others it wholly fails, nor can any assignable reason be found for this caprice.

As an anæsthetic we are bound to accept cocaine as of limited utility, its power of benumbing and deadening pain being limited as far as our experience at present takes us, to the superficial structures. While as an anodyne and hypnotic it must be confessed that no very definite opinion can as yet be arrived at, since researches are too few and experience too narrow and at present unsifted by time and adverse criticism.

In our own experience cocaine has usually succeeded and has materially lessened pain, in many cases it has removed it. Thus far we can endorse the report of others but we should prefer far more prolonged trial before offering any opinion other than one of a provisional nature.

ANÆSTHETICS AND THEIR ADMINISTRATION,*

By J. William Roberts, L.D.S., F.R.S., Glas.

Mr. President and Gentlemen.—The subject of anæsthetics is one of very much importance to us as dental practitioners, and although a great deal has been spoken and written upon the subject there still remain many debateable points for discussion.

The dental operating chair is looked upon with great horror, but of late years this has become very much reduced, from the fact that we have at our disposal means for reducing or entirely avoiding pain. Perhaps in no branch of surgery are these remedies so generally used as in dental surgery. I purpose to confine my paper to the anæsthetics used most frequently, viz., chloroform, ether, and nitrous oxide gas, and although there are several anæsthetics prepared from alcohol, known under different names, as bichloride of methylene, as the physiological effects of most of these differ but slightly, chloroform and ether may be taken as typical of other anæsthetics. Nitrous oxide gas is the principal anæsthetic used. Æther and chloroform are not so frequently used, still, as we are occasionally compelled to assist in the administration of these remedies I think it is the duty of every dental surgeon to make himself thoroughly acquainted with their preparation, physiological effects and mode of administration.

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* Read before the Members of the Midland Odontological Society, special meeting, Thursday, November 27th. 1884.

Chloroform is the terchloride of a hypothetical radical called formyle, the teroxide of which is known under the name of formic acid. It was discovered by Soubeiran, in 1832, and was used by Dr. M. Glover, in 1842, who investigated its action on animals ; but it was not until 1847 that it was introduced to the medical profession as an anæsthetic by Dr. James Simpson. It is prepared by treating rectified spirits of wine with chlorinated lime, slaked lime and chloride of calcium, several complex chemical changes taking place during its manufacture. Chloroform is likely to contain several impurities, amongst which may be mentioned alcohol—this reduces the sp. gr., and if a little is dropped into water the surface becomes opaline—whereas if the chloroform be pure it falls to the bottom and remains bright and liquid ; it does not very readily take fire but does so immediately when æther or alcohol is present. Æther is sometimes added, but the tests for its detection are very much the same as those for alcohol. Chloral may be present when the quantity of lime is insufficient to render decomposition perfect, but this is not easy to detect. There are other impurities such as heavy volatile oils, which are occasionally found in inferior qualities, and which are likely to be very injurious to the organism. A drop of such chloroform when allowed to evaporate from the palm of the hand will leave a strong smell behind it. The liquid will also black sulphuric acid if mixed with it.

Æther is also prepared from rectified spirits of wine by the action of sulphuric acid. Pure æther is colourless and transparent, very light and limpid, of a powerful but rather pleasant odour, and is extremely volatile, very inflammable and apt to take fire on the near approach of a light. It is often adulterated with rectified spirit and with water, of which it takes up a small quantity, or it may contain oil of wine, in which case, in water, it becomes turbid.

Shortly before the discovery of chloroform it was employed as an anæsthetic by Horace Wells, a dentist, of Connecticut, this was in the year 1846, but it was found less efficient than chloroform, and more irritant to the nervous system, and during the last few years it has become a popular anæsthetic from its supposed safety.

Æther as well as chloroform may be employed as a local anæsthetic in the form of spray, and both of them should be carefully secured, excluding light and the sun's rays, and by keeping them in a cool, dry place, as æther has a strong affinity for oxygen, and becomes gaseous at above 96 degrees. It therefore, unless protected, undergoes a gradual change to acetic acid and chloroform to chloric acid, acetised.

Moisture is most destructive to æther from the oxygen it contains and its more ready diffusive action. In fact the preparation may be so changed by temperature and the absorption of oxygen, as not to be depended on for producing anæsthesia.

The next anæsthetic, nitrous oxide gas, is the one in which we are mostly interested, from its safety, easy mode of administration, its rapid effects and equally rapid recovery of the patient. Nitrous oxide is made from nitrate of ammonia, a salt prepared by neutralizing nitric acid with carbonate of ammonia—this salt, to be pure, should be white and of a slightly ammoniacal odour and not redden litmus. Nitrous oxide may also be obtained by treating zinc with nitric acid, but the safest and purest can be obtained only from the ammonia nitrate as that made from zinc is likely to contain traces of arsenic. The nitrous oxide gas is obtained by heating the ammonia nitrate in a glass flask. At 226 degrees it melts, at 360 it boils, and from 460 to 485 it throws off nitrous oxide gas. This is first passed through a wash bottle containing water which washes it, and condenses a certain amount of watery vapour which passes over, it is then passed through another wash bottle containing a solution of protosulphate of iron, about 2oz. to the pint, then through another wash bottle containg solution of caustic potash 1oz. to the pint, these solutions purify it, the first, by the ferrous sulphate taking up the nitric oxide and forming oxide of iron, and the second by the caustic potash taking up the nitrous acid gas forming nitrate of potash.

When the gas passing over will re-ignite a piece of smouldering wood, so as to produce a bright, white light, communication should then be formed between the last bottle and the gas holder, where it comes in contact with a large quantity of water, this again assisting in purifying it —gas thus prepared is undoubtedly pure. Great care should be taken not to allow the nitrate of ammonia in the flask to exceed 500 degrees of heat, should it do so, nitrous acid gas is thrown off, which, instead of being colourless as it passes through the bottles, is of a dense white fume, having a suffocating odour. This it is needless to remind you is highly poisonous.

A few years ago, it was discovered that nitrous oxide gas, by applying at a low temperature a pressure of 30 atmospheres, could be condensed into a liquid state. This has been extensively manufactured and supplied to the profession, but hitherto the process appears to have been kept a secret.

During a correspondence I had with a manufacturer, in speaking of the purity of his gas, he says that "if nitrous oxide gas was passed into the holder containing water and allowed to remain 24 hours, it would take 200lbs. more on the square inch to liquify it," whereas I find from personal experience the gas is much safer and pleasanter to inhale, after being in contact with water for a few hours. This to my mind clearly proves that the purity of the gas so manufactured is very questionable, as instead of being passed through the several purifying solutions—in a practical manner—it appears to be purified upon the theory, that, notwithstanding any impure gases which may pass over from the flask, by subjecting it to pressure of 30 atmospheres, only nitrous oxide gas becomes condensed and liquified. Now, Gentlemen, on, the face of this how can manufacturers advertise second quality of nitrous oxide gas. Either it must be pure nitrous oxide or it must be impregnated with nitrous acid gas, or nitric oxide, yet it is said that nitrous acid gas cannot be condensed with a less pressure than 300 atmospheres, and nitric oxide 270 atmospheres.

For some years I have used both the liquid gas and the diffused gas from the gas holder—I mean the gas chemically purified—and have noticed a marked difference, in fact such a difference that where medical men have taken the diffused gas themselves or their patients, they decidedly objected to the liquid gas afterwards.

To one who is in the habit of administering both forms the difference is much better recognised.

The compressed gas has a sweet taste and frequently produces a sense of suffocation, and if pushed to a complete state of anæsthesia, the patient frequently assumes such a livid hue and stertorous breathing as to be positively alarming; and in young people of a hysterical character, the after effects suggest the question, Is the remedy not worse than the disease? Now with the diffused gas, if perfectly pure, there is not any recognisable taste, little or no lividity, stertorous breathing very rare, and anæsthesia may be pushed much further without the alarming symptoms.

This Sir, I think, clearly proves the theoretical purity of nitrous oxide gas to be very faulty, and although both liquid and condensed answer the chemical test, that this test is also very unreliable.

It is, I believe, a fact that the principal if not the only deaths which have occurred during the administration of nitrous oxide gas, have been where the liquid gas has been used.

Nitrous oxide gas was discovered by Priestly in 1744, but its anæsthetic properties were discovered by Sir Humphrey Davy, in 1776. He found that nitrous oxide relieved him from headache after a profound fit of intoxication, brought on by drinking a bottle of wine in order to compare its effects with those of the intoxicating gas.

Notwithstanding the experiments made by Davy, in which the value of the gas was fully demonstrated some 44 years elapsed before it was brought into actual use.

(To be continued.)

IRREGULARITIES OF THE TEETH.

By Norman Kingsley, D.D.S., of New York.

(*Concluded from page* 1092).

It is possible, in correcting deformities or irregularities in the dental arch, to create a deformity of the external features. It is not always advisable to attempt to alter the form and expression of a mouth where the condition is an inherited peculiarity—being a part of the family type—and where the change would involve prolonged effort, possible breaking up of a good articulation of masticating organs, and with the knowledge that nature will be constantly making an effort to return to the inherited type. In hereditary cases of extensive character which have been delayed until at or near maturity, we can never feel certain but that the original tendency to malposition, so long unbroken, will reassert itself at any time we abandon retaining fixtures.

Upon general principles it is desirable to retain every sound tooth in the mouth, yet there are many cases of crowded dentition where the removal of a tooth upon each side of the jaw is justifiable. The retention of every tooth in the mouth is not necessary to the efficiency of the masticating apparatus, is not required to maintain the contour of the jaw, and the loss of certain teeth produces no visible external effect. The articulation of masticating organs is of more importance than their number, and a limited number of grinding teeth fitting closely upon occlusion will be of greater benefit to the individual than a mouthful of teeth with the articulation disturbed.

In an abnormality arising from the mixing of inharmonius types, as the small jaw of one parent with the large teeth of the other—resulting in a crowded condition—it is very doubtful if the arch can be made regular without the extraction of some of the teeth. It requires a judgment founded upon long experience to decide always upon the wisdom of extraction, and when such conviction is reached one may be equally at a loss as to the choice of teeth to be removed. It is a disputed point which of the teeth behind the canines can best be spared from the mouth. There are so many considerations to be taken into account that it is hardly possible to lay down any rule of universal application. If the sixth year molars are badly decayed their removal would be indicated. If they were sound, and also the bicuspids, there might be no greater reason for their removal than either of the bicuspids. In fact, sound molars in the jaw are of more value as masticating organs than equally sound bicuspids.

As a rule, extraction of any teeth from a pinched or V-shaped jaw before it is widened would be likely to prove bad practice. Certainly, the extraction of any teeth from the sides of the jaw in such cases for the purpose of correcting or improving the condition without immediate subsequent steps being instituted to widen the arch, would be most unscientific and dentrimental. Cases are not uncommon which show that a pair of any of the teeth in the mouth may be removed to correct an irregularity, excepting the canines of both jaws and the superior central incisors. It would be an inconceivable case which would justify the extraction of the superior central incisors ; but the upper lateral incisors and any pair of the lower incisors may be removed in certain cases without serious detriment to the appearance of the mouth.

The most frequent exhibition of irregularity in the lower jaw is confined to the incisors and canines. The canines are too prominent, and the incisors are crowded and lapping. Most of such cases cannot be corrected by enlarging the arch ; the overlapping of the superior incisors forbids. The remedy is comparatively simple. The extraction of one of the centrals is indicated. This will give the required room, and enable the canines to be drawn in ; and at the same time the space made by extraction is closed. No matter what the mal-arrangement of the incisors may be, it is almost always better to extract one of the centrals to correct it. When the irregularity is corrected the extracted tooth will never be missed.

The treatment of irregularities is almost entirely mechanical. To the anatomical, physiological, and pathological knowledge required of the operator, there must be added a knowledge of mechanism and an ingenuity to apply it. Levers, pulleys, inclined planes, wedges and elastics singly and in combination are required for this purpose. It is quite impossible for one to overcome a complicated case of irregularity who has not a comprehension of each and all of these instrumentalities.

So far as pressure itself is concerned it is immaterial from whence it is derived. The same weight, force, or power, will produce the same result. It is only a matter of convenience what source shall be employed. For widening a narrowed arch, a jack screw is the most effective means, and can be used to spread one tooth only or all the teeth on both sides according as it is applied. Wedges driven between the teeth will enlarge the arch. Levers with elastics are used to twist teeth in their sockets, and an inclined plane can be made to move teeth laterally.

The application of such appartus to the movement of teeth is one of the most responsible duties the dentist is called upon to perform.. Each and every one of these mechanical powers can be made to do his bidding, and equally each one of them may become a formidable engine of disaster. When applied in the mouth they should have constant watchfulness and care. Not one of them but, in the hands of empirics, would cause the destruction of those valuable organs they can be made to conserve.

SOME POINTS CONNECTED WITH THE TREATMENT OF FRACTURE OF THE INFERIOR MAXILLA.

By F. Newland Pedley, M.R.C.S., and L.D.S., Eng.

(Concluded from page 1089).

Treatment may, as a rule, be long deferred, but the most unsatisfactory cases that dentists are called upon to deal with are those that have been long neglected, or represent the failures of general practitioners. Here we may frequently have to cope with marginal necrosis, and, worse still, with so much callus that is is absolutely impossible to place the fragments in correct position. Such an instance occurred to me last Christmas-tide, and I reported it amongst numerous others, before the Students' Society of this hospital.

The fracture was oblique, of long standing, and much callus was present. I made an attempt under the full influence of chloroform to reduce the displacement, but in vain. This naturally suggested to me the resection of the ends of the bone, and I think it would have been the correct procedure, if the personal appearance of the patient were of primary importance ; but as this patient was married, and it was her own husband who had broken her jaw, I aswr reconciled to the slight deformity that persisted.

As regards the use of an anæsthetic, it will seldom be requisite and always dangerous ; for the tongue becomes thrust backwards by the fingers of the surgeon, and the abundant flow of saliva collects at the back of the mouth, threatening suffocation to the patient. Once only I was obliged to use chloroform for a refractory child ; on the other hand, I have succeeded in applying a modified Hammonds's splint in the mouth of a patient five years of age, without producing lachrymation, or other obvious signs of disapproval from the little sufferer.

Touching the period during which the wire should be worn, I look upon six weeks as the shortest period, and at the expiration of that term I keep the patient under supervision until I am quite certain that firm union has taken place. The splint causes no inconvenience whatever after a time ; in fact, one child was not brought back to me for five months, and the mother apologetically explained that she had been much engaged, owing to a recent increase in her family and other domestic cares ; so she had deferred her visit to the hospital as the wire was comfortable. Meanwhile, the crowns of the developing permanent lateral and canine teeth of the lower jaw were discharged through a fistulous opening by the side of the chin.

This is the only instance which has come under my observation in which the successional teeth have been discharged through the skin at the site of fracture ; although it is a common thing for flakes and spicules of necrosed bone to be exfoliated. I much doubt that all these small fragments of necrosed bone are primarily due to comminution of fracture. Weeks and months sometimes elapse before they come away, and it is not improbable that some of these slight sequestra are due to necrosis of the margin of the fractured bone, consequent upon the inflammation occurring at the seat of lesion, as a result of mobility of fragments and their laceration of the surrounding soft tissues. Whatever its correct pathology may be, this exfoliation of necrosed bone greatly retards repair.

There is still another field of surgical practice, closely allied to fractures of the jaw, and eminently suitable for treatment by the wire-splint. I allude to those instances where the lower jaw has to be divided in order to obtain access to malignant growths of the tongue, or floor of the mouth. I reported a case of this description before the Society some months ago, but from press of time it received scant consideration, and I promised to bring the subject forward again, when I should be in a position to give the result of the treatment.

The patient was suffering from epithelioma of the floor of the mouth, and division of the lower jaw was a necessary step in the removal of the growth. Mr. Moon was consulted, and some days before the operation the teeth were thoroughly scaled, and a full Hammond's splint was made and fitted. At the subsequent operation Mr. Clement Lucas divided the jaw through the socket of an incisor tooth, removed at the time. The tumour was excised, and then the fragments of the bone were brought together and fixed in their correct position, hy means of the Hammond's splint, which was secured to the teeth with binding wires in the usual way. The patient recovered perfectly, with a correct articulation of the teeth. The splint shown is the one worn by the patient. The credit of the conception is not mine.

The above method is obviously better than the plan of uniting the fragments by means of wire sutures passed through the substance of the bone.

The latter practice has received fair trial, but with very questionable results. The tension of such sutures holds the parts very firmly together at first, but is very liable to cause subsequent loosening from absorption of the surrounding bone. The space between the roots of the lower incisors is so slight that there is great risk of the teeth being injured or periodontitis set up.

In reviewing the steps of the operation, as performed by Mr. Clement Lucas, one possible improvement suggests itself, viz., that the section through the lower jaw should not be merely vertical, but should be made by two oblique cuts meeting at an angle, as described in some books.

In this way the ends of the fragments lock into one another and retain their position, although the whole of the periostium is divided, and the cut surfaces of the bone are smooth.

The material used for Hammond's splint, in hospital practice, is iron wire, for its cheapness is a consideration, but in private practice I should certainly prefer gold.

The deterioration in value of sufficient wire for a splint would be very slight, and it has the recommendation of strength, colour, pliability, and cleanliness. By selection, and by habit of use, gold is the metal to which a dentist would naturally and rationally turn in devising a mechanical appliance to be worn in the mouth. A few simple experiments upon my own teeth have confirmed me in this belief, and enabled me to speak from a patient's point of view.

The claims of Gunning's splint cannot be ignored, for those cases in which firmly implanted teeth do not exist in each fragment of the fractured bone, in edentulous cases, and in fractures behind the wisdom tooth.

Gunning's splint may be used in those exceptional instances in which Hammond's is contra-indicated ; but it must be remembered that in all the very severe cases that demand the use of Gunning's splint, the upper jaw becomes the splint for the lower. The mouth is therefore closed, the act of mastication is suspended, speech is interfered with, saliva dribbles from the mouth, and there is a sense of great fatigue from the propping open of the jaws. Even the simpler forms of Gunning's splint which do not require closure of the jaws are more cumbrous and a greater impediment than Hammond's, and possess no advantage where both are applicable. The above consideratiosn are of great moment to patients who rely on their daily labour for their subsistance ; for enforced idleness frequently entails a condition of body and mind unfavourable to the process of repair.

I am unwilling to close this paper without making reference to one read at the last meeting of the British Dental Association in Edinburgh, by Mr. W. Campbell, upon "A Method of Treating Fractures of the Inferior Maxilla," and to which he proposed to attach his own name as "Mr. Campbell's method." The splint that he uses consists of a metal cap to fit the teeth of the lower jaw, lined with warmed gutta-percha, and pressed into position. This form of splint is identical, in principle, with one described in Mr. Tomes's text-book on Dental Surgery (2nd edititon, 1879, p. 660), which runs thus :—

"An impression of the jaw in wax or plaster is taken : . . . this is cast in plaster, and the displacement remedied by sawing through the plaster model. A gold or vulcanite plate is then made to fit the crowns of the teeth, when the halves of the jaw are reduced to their proper position. In some cases it will be best to make the splint fit loosely, and to line it with warm gutta-percha at the time of introduction ; but wnether this course is preferable to making the plate itself fit accurately, can be determined only by the inspection of the individual case."

A very similar description is contained in Heath's

"Injuries and Diseases of the Jaws" (2nd edition, p. 39, 1872, and also in the last edition). Here the splint is spoken of as "Mutter's clamp," "modified by M r. Tomes and other's" thus: "The modification consists in making the silver cap fit accurately to the teeth, from some distance on each side of the fracture, by moulding it to a plaster cast of the jaw. The cap is then lined with gutta-percha, which, being warmed when the apparatus is applied, fills up the interstices and fixes the cap, the fragments being maintained in position whilst the application is being made."

Apart from all question of the title by which the apparatus should be known, I should always prefer Hammond's splint when it could be used; for the teeth remain free, and sight of the line of fracture is not obscured.

In conclusion, I regret that Mr. Campbell endorses and quotes an erroneous assertion of Dr. Kingsley's, in the work on "Oral Deformities," when he says, amongst other untenable objections to Hammond's splint, "Furthermore, even when the necessary teeth are *in situ*, and are sufficiently firm it would frequently be found quite impossible to get any wire between them."

I have never failed in my attempt to pass a binding wire either between the teeth or through the gum, nor have I yet seen a dried preparation of an inferior maxilla between the teeth of which a wire could not be passed—provided, of course, that the teeth in the mouth be numerous.

A SHORT NOTE OF THE ACTION OF COCAINE IN DENTAL PRACTICE.

By Percy May, M.R.C.S.,L.D.S.E.

A safe local anæsthetic for dental surgery being such a great desideratum, and hearing such good accounts of cocaine being used successfully and satisfactorily as a benumber of pain in ophthalmic surgerv and a few other branches of the profession, I was in great hopes it would prove more efficacious for our specialité than the only practicable one at present, chloroform.

For tooth extraction I have tried a 1 in 20 solution of the muriate of cocaine in alcohol, painted upon the gum with a camel hair brush 3 or 4 times consecutively, previous to avulsion, but in every instance the patient was strongly in favour of my usual method *i. e.* sp. of chloroform used in the same way. Thinking probably I had made too great a demand upon its powers in the above, I tried it for allaying the extreme tenderness and pain of peridental inflammation, but was disappointed to find the result far inferior to the local application of tincture of aconite. I next applied this preparation in excavating a carious tooth with sensitive dentine, and here it seemed to act with decided benefit in ameliorating the well-known painful symptoms of this little operation.

Doubtless I am at fault either with the strength or mode of applying it, and moreover my experience of the preparation, its properties and effects, is of such short duration that I trust the results so far ascertained by me, will be vastly improved, if not entirely negatived by further and prolonged research, which I trust it will receive from the profession generally. Since writing the above I have used a more concentrated solution, after 3 applications of which to the apex of tongue it was impossible to distinguish the two points of a pair of compasses separated about $\frac{1}{4}$ of an inch, being able to perceive merely that the organ was touched. I purpose, therefore, to continue its use in the proportions of 1 in 5 and 10 in all cases applicable, with, I hope, more fovourable results than hitherto found by me.

CLINICAL STUDIES ON THE COMPLICATIONS OF DENTITION.

By Dr. E. Magitot.

Concluded from page 1096.

A considerable number of cases have been thus treated by us in spite of numerous obstructions, such as complete muscular contraction, extreme swelling of the parts, and closed in state of the tooth to be extracted. These divers complications would, one would think, render impossible the introduction of ordinary instruments—the forceps for example. But there is an instrument borrowed from the ancient surgical arsenal that bears the name of *langue de carpe.* It is a simple bent lever with a pointed extremity, which can be inserted into the cavity which divides the wisdom tooth from the one preceding it. By a backward movement of the lever the wisdom tooth is in most cases reached and dislodged. The employment of this instrument in such circumstances is possible, even in the event of a complete occlusion of the mouth, for it is introduced in default of their action at the back of the dental arch, without necessitating the opening of the jaws.

It is evident that the extraction of the wisdom tooth, though inadmissible in simple mucous complications, may be looked upon as the rule in bony complications.

But this rule, though incontrovertible, encounters in many instances obstructions that may become a source of extreme embarrassment to the surgeon. Without reverting to the muscular contraction, which may be overcome in a certain degree by the enforced separation of the jaws, the patient being under the influence of an anæsthetic, there are many other complications. Sometimes the wisdom tooth is enclosed under athick cushion of mucous membrane transformed into a cicatrised tissue; sometimes the deviation which it has experienced in its direction, has carried the crown either behind or in front, its triturating surface coming in contact with the posterior face of the second molar; sometimes its directlon is altogether exterior, and perfectly horizontal, and the crown penetrates into an indurated mass formed by the tissue of the cheek.

The artificial opening of the mouth, though permitting an examination of its parts does not facilitate the operation, for any application of an instrument remains impossible.

It is in cases of this kind, that several surgeons have suggested the expedient of affecting as a preliminary operation, a complete transversal section of the cheek on a line with the commissure, in order to approach nearer the focus of the complications, and affecting the extraction in this way. We may remark that we have never had recourse to this operation; but have several times succeeded in relieving patients by the ordinary method of the artificial opening of the mouth.

Among other cases, there occurred the following. A young man twenty years of age, a patient in the hospital of St. Antoine, under the treatment of Brocia, evinced for over six months grave symptoms on the side of the face; multiple fistulæ, induration of the cheek, complete contraction of the jaws, general complications, etc. Several attempts at extracting an inferior left wisdom tooth, the recognised cause of the evil, had proved abortive; and the surgeon proposed to affect the section of the cheek for the purpose of discovering the tooth in question. We requested to be permitted to make a last attempt, the patient being under the influence of chloroform; we forced the jaws open by wedges and having ascertained that the wisdom tooth enclosed by swellings of undrated mucous membrane was straight, we succeeded in extracting it by the use of the *langue de carpe*.

Some time ago a case of the same kind came under notice at the hospital of St. Louis, in a patient of M. Lallier, a young man who had suffered for a twelvemonth from abscesses, fistulas seated on the left cheek, appearing like scrofulous affection of long standing. The surgeon, having wisely suspected the intervention of a wisdom tooth, called upon us to repeat the same operation, which had a similar result as in the preceding case.

But there are still some cases relatively simple, in which, in spite of the sufficient opening of the jaws, the anomalous direction of the wisdom tooth precludes the insertion of an instrument. It is an example of this kind, of which we have given a detailed account, and have endeavoured to utilise under the title of the "Preliminary Operation for the Temporary Ablation of the Second Molar." In the case of a patient seriously ill, and exhausted by a long suppuration and fruitless operations, the wisdom tooth was entirely enclosed in the cheek. M. Verneuil, to whom he came as an out-patient, resolved to relieve him by practising the section of the cheek.

The ablation of the second molar which was kept out of the mouth for two hours in a moist state, permitted us to insert instruments which, reaching to the wisdom tooth, after several attempts uprooted it from behind. The re-implanting of the second molar performed two hours later, was followed by consolidation of the parts, and all the disturbances disappeared.

These cases are happily rare; but we may point out the possible practice of such a re-implanted restitution as appli- the extraction of a tooth with the object of effecting a passage cable in the vicinity of the wisdom tooth, inaccessible in in ordinary cases.

We will now say a word about the special treatment of one of the more serious complications in this series of phenomena. It treats of the muscular contractions. It is known that many surgeons, (M.M. Sarasin, Richet, Gaujot,) prescribed when the contraction lasted any length of time, a section to be effected of the fibres of the masseter, or the operation of Esmarch or Rizzoli. But we have sufficiently established that muscular contraction is here a consequence —a secondary phenomenon in the series of complications of the wisdom tooth, and that it ought to cease and does constantly cease of itself, so soon as the first cause, that is to say, the wisdom tooth has been removed. When, then, a complication of this kind, even if accompanied with a complete occlusion of the mouth comes under our notice, and in the well-established absence of all ankylosis in the articulation of the temporal maxillary, we must give up the former idea of the muscular section or the section of the ascending branch. The efforts of the surgeon ought to be devoted exclusively to the wisdom tooth, which can be reached, as we have already said, either by the outer edges of the alveolar arch by exciting the separating of the jaws under chloroform, or by the temporary extraction of the second molar.

In some observations, published by authors and cited above, where the bony section has been carried out, the ablation of the wisdom tooth has been judged necessary, and has been resorted to in the second place. This practice is culpable, and we are assured that if they had begun by this last operation they would have avoided the first, which has never been professionally recommended, save in a state of incurable immobilisation of the articulation of the inferior maxillary, and under no other circumstances that can complicate the eruption of the wisdom tooth.

STOMATITIS.

By Louis E. Sexton.

(*Concluded from page* 1099).

This variety may follow eruptive fevers or arise from dental irritation, or it may arise from a true Herpes of the mouth, somewhat similar to Herpes labialis. This variety of itself usually produces no constitutional disturbance, but is very painful, due to the exquisite tenderness of the ulcers.

The next form of stomatitis is the one which is most frequently met with, the ulcerative stage, in this the gums are the chief seat of the disease, these are congested, swollen, and spongy, and bleed freely, a peculiar kind of growth sometimes appears which leaves a raw surface which speedily ulcerates. These ulcerations present the following characteristics, the surface is covered with a yellowish material which on being removed, as for instance, washed off by a stream of tepid water, leaves several scarlet points on a yellowish ground. The edges of the ulcer are sharp and jagged, of a brilliant vermilion or violet colour, usually raised but not very deep at first, but as the disease progresses they become deeper. These ulcers usually begin on the margin of the lower gum in front and from thence spread backwards, the membranes surrounding them are swollen and œdematous. There is considerable pain, but when these ulcers are fully formed there is said to be a decrease of febrile excitement and an extremely profuse flow of saliva. In very severe cases the ulceration may go on till the jaw may become involved, which then becomes necrosed, and the teeth full out. This stage may last some time and become very troublesome.

There are several subdivisions of this stage given by some authors, but I think we need not spend time by considering more than two. In the one there are but one or two ulcers which gradually extend over the whole mucous membrane, at the same time rapidly increasing in depth and presenting no signs of healing ; this is also accompanied with hectic fever, the exacerbations occurring night and morning, and quickly wearing down the strength.

The other form consists of a softening of the mucous membrane of the palate at about its centre, which becomes converted into a kind of pulp of a reddish or fawn colour. On the removal of this an ulcer is found having perpendicular walls, but the bone which forms the floor is found to be perfectly healthy.

It is the opinion of many that this form of the disorder is contagious, that for example, it may be communicated by eating with the same spoon. Bristowe in his "Theory and Practice of Medicine," says, "It has a close relation, at all events anatomically, to that observed in cattle affected with foot-and-mouth disease."

The last stage or variety of this disorder is the gangrenous, which I shall very briefly describe, as it is fortunately extremely rare. When it does occur, it is usually in children of weak constitution and lymphatic temperament, of from two to seven or eight years of age, and who have been exhausted by some illness, as measles. It is usually preceded with languor and loss of sleep and appetite, irritability, emaciation and night sweats are not uncommon.

According to Harris, the form of gangrenous stomatitis which is most likely to come under the notice of a dentist is one which first attracts notice by a puckering of the cheek, near the corners of the mouth, the gums are congested, purple and swollen round the teeth, bleeding freely at the slightest touch, a muco-purulent discharge is secreted between the necks of the teeth, which becomes thin, acrid and watery, giving a most offensive smell to the breath ; the gums become flabby and detached from the teeth and soon become covered with ash coloured vesicles. This may last sometime, but usually gangrene sets in, the gums come away, the entire part being destroyed and the inferior maxilla is exposed.

This usually starts from the labial sides of the gum rather than from the lingual, the whole mucous membrane of the mouth may become involved, rendering the opening of the mouth difficult, if not impossible, Usually death takes place from the 8th to the 14th day after the gangrene sets in.

The other kind of gangrenous stomatitis commences without the premonitory symptoms observed in the first, in a hard swelling in the cheek about the size of an almond, this increases, and the skin over it is first reddish, then it turns livid, then becomes greyish, surrounded with a red ring, then becomes black ; the mucous membrane becoming gangrenous, giving a most fœtid odour to the breath, the parts affected separate, but death usually takes place before the death of the bone. It is in this stage (gangrenous) that Dr. Sansom thinks he has discovered in the blood "certain translucent moving particles which he considers to be of the nature of organisms. Inoculation with the infected blood produced septicæmia with the manifestation of similar moving bodies."

As to the treatment of this disease, most cases can be readily cured if appropriate treatment is carried out, the ulcerative and gangrenous forms may give great trouble, but no dentist would think of letting them, especially the latter, run to any serious length without having a physician or surgeon in, but usually the aphthous and ulcerative stages yield to treatment very readily. In the simple or catarrhal stage often nothing is wanted but a mild demulcent wash or a solution of carbonate of soda or chlorate of potash. In the aphthous and ulcerative stages the local treatment consists in applying a solution of nitrate of silver to the ulcerating parts (some recommend touching them with nitric acid diluted), changing them into healthy granulating surfaces. If there is much fœtid of the breath, a wash such as Condy's fluid ought to be employed. If much irritation exists demulcent washes such as thin mucilage are very frequently of benefit. Of course the removal of all sources of local irritation, as loose stumps &c., will be seen to, at once.

As to general treatment, chlorate of potash is used, and is said by some to be almost magical in its results, Dr. West saying that he has abandoned almost all local treatment in favour of administering this drug. Mr. Tomes says the best results have followed his use of it. Mr. Coleman says : "If I were asked to name a disease with its specific I should answer, ulcerative stomatitis and chlorate of potash."

When ulceration has been extensive and prolonged no doubt tonics and good diet would be given as well. Of course if the disease is the result of others existing in the system, it will be attacked through them.

In the gangrenous forms I should think the treatment was better not attempted by the dentist. It consists of destroying all the sore with nitric acid (some prefer hydrochloric) and keeping the patients strength up with stimulating food.

I have wondered why chlorate of potash should be so beneficial in this particular form of inflammation rather than other antipyretic drugs. Whether it would depend on the action of the potash on the blood, or by the being secreted by the saliva, or what would be a probable reason, perhaps some one versed in materia medica here to-night, may give us his views upon it.

MENTHOL—"I think," says the *Louiseville Medical News*, "it was Mr. Malcolm Morris, who, some time ago, spoke of the antiseptic use of menthol in ringworm of the scalp. I applied a solution in rectified spirit to the tinea tonsurans of a young friend in the winter of 1879, and cure resulted; and recently I have met with success in this disease from a pomade of menthol, iodoform and vaseline. In facial neuralgia, in some form of sciatica, in neuralgic headache (clavus), and in toothache, the most recent instance being in very severe case of a lady recovering from acute alcoholism, I have repeatedly found relief to follow within a few minutes of its application. The cones or sticks are useful for external application. Frequently, however, I use now the following formula : menthol. 30 grains ; and spirit of rosemary, rectified spirit, each two drachms ; or compound spirit of lavender may be used instead of the rosemary for application to the cavity of a carious tooth. I have only taken it once internally myself, but never have prescribed it. This has, however, been done."

INSTANCE OF INGENUITY.—According to the American *Journal of Dental Science*, Dr. D. M. Clapp, of Boston, has utilized the electric current that flows over his house through the medium of the Electric Light Company's wires, by making it operate his dental engine motor, thus avoiding the care and trouble of a battery. As far as we are informed this idea is original with Dr. Clapp. By a simple contrivance he can regulate, with the foot, the rapidity and power ef the engine to suit the demand.

British Journal of Dental Science.

LONDON, DECEMBER 15, 1884.

COLLECTIVE INVESTIGATION OF DENTAL DISEASES.

Collective investigation of disease amongst medical practitioners has become an accomplished fact.

The British Medical Association, with characteristic zeal and energy suggested the desirability of collecting brief but accurate statistics of various diseases. These statistics were to be furnished by busy men in busy practice, were to be entered upon cards or forms printed in such a way as to require of the medical man, but little time or labour for he would have only to refer to his note book for cases and to jot down his answers.

The mass of material thus accumulated was placed in the hands of a competent committee who gleaned results which were subsequently published with hints to those who were willing to prosecute the research further. By giving out some medical *crux*, and issuing a card for each, any and every medical man who cared could contribute his mite to the general fund of information.

The success which crowned the labours of these collective investigations has naturally enough led to the extension of the field of research. Addresses delivered at the Congress, held at Copenhagen, were instrumental in initiating an International Collective Investigation, an organisation which will, unless its founders are over-sanguine, lead to very valuable results. It is surprising that this useful form of investigation has not been extended to special departments and notably to Dental Medicine and Dental Surgery. Collective investigation among dentists should lead to the accumulation of much information. There are so many questions still undecided in the practice and pathology of dentistry, so many which would be vastly elucidated could the experience and research of the majority of the thoughtful dentists be obtained. This method of gathering results together admits of peculiarly easy treatment by the "timeless toiler." So slight a sacrifice of leisure is entailed upon the recorder of his experience that it seems probable, were the investigation once floated, that dentists would be at least as willing as are medical men to render assistance. So much has been written and so much has been said about caries attacking teeth that the phrase "dental caries," is a household expression, but how very slender is the grasp we have upon its pathology and how shallow are even the most specious arguments advanced in support of the many theories advanced in explanation of dental caries. Or again, if we take pyorrhœa alveolaris a condition so familiar and yet one so indifferently understood, that its treatment must be termed at best, purely an empyrical one, while the true conditions at work upon the diseased tissues are yet shrouded in doubt and uncertainty. Questions such as how far early drugging of children directly leads to dental disease and deformity and the whole field of prosthenic dentistry would undoubtedly be benefitted by a well conducted collective investigation. In urging the utility of this scheme upon the dental profession, it seems to us we are indicating a means of rescuing from loss a really valuable mass of facts. But what is everybody's business is nobody's business! To make the research of any practical value, the subjects should be chosen by competent judges, by men who have learnt in the school of experience just what we know, and of what we are ignorant, and further should be able to select really practical, useful subjects for research. Recondite conditions, however interesting to the pathologist, may be of little or no practical value outside his narrow circle and so would call for but little comment from the average practitioner.

How far the inertia which forms so striking a trait of some of the dental profession, would swamp any attempt in this direction only the course of events will show. The more exact methods of research|and greater precision of teachers are rapidly turning out practitioners who could do the duties of members of a collective investigation society and could perform them well. The tendency is to forget the minutiæ of one's early lessons and this tendency would be powerfully resisted were men to habitually report experiences, modes of treatment, et cœt.

DENTAL CARIES AND MR. SEWILL'S VIEWS.—Mr. Sewill commencing to speak on dental caries at the Odontological Society found his ideas far too prolific to be cramped into ten minutes. He accordingly dipped his pen into ink made from gall-nuts and vivisected his opponents in the Association Journal. Even this was too narrow a field and so Mr. Sewill's ten minute oration has incubated into a volume of 66 pages. "How small a matter kindleth a great fire!"

DENTISTS AND THE DENTAL REGISTER.

The Register for the year 1885 is now in proof. It would seem that many dentists are even now unaware that they can and should register their surgical qualifications in "The Dentists' Register." This is most important and all who omitted to register should do so while it is yet time. On page 4 of the Register the qualifications which are registerable are given, they are :—Lic. Den. Surg. R. Coll. Surg. Eng. ; Lic. Den. Surg. R. Coll. Surg. Edin. ; Lic. Den. Surg. Fac. Phys. Surg. Glasg. ; Lic. Den. Surg. R. Coll. Surg. Irel.; D.D.M. Univ. Harv.; D.D.S. Univ. Mich.; Fell. Mem., Lic. Ext. Lic., R. Coll. Phys. Lond. ; Fell. Mem., Lic., R. Coll. Phys. Edin.; Fell. Lic., Lic. Midwif., K. Q. Coll. Phys. Irel.; Fell. Mem., Lic. Midwif., R, Coll. Surg. Eng. ; Fell., Lic., R. Coll. Surg. Edin. ; Fell., Lic., Fac. Phys. Surg. Glasg. ; Fell., Lic., Lic. Midwif., R. Coll. Surg. Irel.; Lic. Soc. Apoth. Lond. ; Lic. Apoth. Hall, Dubl. : M.D.,M.B.,Lic. Med., Univ. Oxfd. ; M.D.,M.B., Lic. Med., Mast. Surg., Univ. Camb. ; M.D., M.B., Lic. Med., Mast. Surg., Univ. Durh.; M.D.,M.B., B.S.,Mast. Surg., Univ. Lond.; M.D.,M.B. Mast. Surg., Univ. Edin. ; M.D.,M.B., Univ. K. Coll.. Aberd. ; M.D.,M.B., Marisch. Coll. Univ. Aberd. : M.D.,M.B., Mast. Surg., Univ. Aberd. ; M.D.,M.B., Mast. Surg., Univ. Glasg. ; M.D.,M.B., Mast. Surg., Univ. St. And. ; M.D.,M.B., Lic. Med., Mast. Surg., Bac. Surg., Lic. Surg., Univ. Dubl. ; M.D., Mast. Surg., Lic. Surg. Q. Univ. Irel. ; M.D., M.B., Mast. Surg., R. Univ. Irel.

THE DISCUSSION UPON ANÆSTHESIA.

At a recent meeting of the Medical Society, Mr. Woodhouse Braine read a lucid paper upon anæsthetics, and a discussion followed. Mr. Braine confined himself wholly to the practical side of the question and scouted the more complex or physiological aspect. In Mr. Braine's paper will be found many very useful hints to those who as novices are anxious to receive hints as to how to manage their anæsthetic and patient. That Mr. Braine imported little or nothing of novelty is true, but it must be remembered that in the busy round of a full practice few men are able to keep in the fore of those who take up the scientific aspect of a subject.

It is noticeable that Mr. Braine remarks, and we think justly, that nitrous oxide is the most difficult anæsthetic to give properly. It is common enough for dentists to administer nitrous oxide gas but it must be confessed that but few administer it at all efficiently, nor is it uncommon for patients to complain afterwards that the anæsthetic failed in its object.

THE discussion which followed was unfortunately discursive. Mr. Eastes long communication was too hurried to receive the attention it undoubtedly deserved, while its length crippled others and reduced the debate to about half-an-hour's duration. So highly important a subject deserves far greater time and care allotted to its treatment than even a prolonged meeting of the Medical Society could give it. Even as it was the debate was allowed to drift into bye channels such as the local anæsthesia due to cocaine and the effect of chloroform on dogs, while the main issues went to the wall. It is clearly the case that this meeting although it may possibly act as a fillip to many, has failed in its chiefest object, namely, to thresh out the subject of anæsthesia.

THE formula for Witzel's carbolic acid cement is as follows :—

℞ Acid carbol., 5.0 ;
Alcohol absol, 2.0 ;
Aq. dist., 40.0.
Glycerinæ, 20.0.

Mix, and add an equal volume of the zinc chloride used in preparing oxychloride fillings. To a sufficient quantity of this mixture, add oxide of zinc, to give it the necessary consistence for filling.

HYSTERICAL HALLUCINATIONS.—Under this heading an American contemporary writes some sound sense. It appears that a lady the subject of hysteria went to a dentist to have some teeth attended to. In the middle of the treatment the lady became hysterical, and vacating the operating chair, rushed into the street crying "I am ruined." This of course, led to inquiry and unfriendly criticism about the dentist. However, when the matter drifted into court as it was inevitable it should do, it was clearly proved that hysteria was present and fully accounted for the strange procedure of the patient while it exonerated the dentist alike from blame and being heavily mulcted. One among many such warnings, this case proves how easily a professional man's character may be aspersed and his career ruined. It should be a rule that when an aæsthetic is given two at least are present, and that on all occasions witnesse s should be within eye and ear shot.

Abstracts of British & Foreign Journals.

DENTAL COSMOS.

DENTO-EMBRYONAL HISTOLOGY AND TECHNOLOGY, by W. XAVIER SUDDUTH, D.D.S.

Demonstrator of Histology, in Philadelphia Dental College.

This paper is commenced by an expression of regret that those of the D.D.S. do not possess more D.D.S., that their knowledge of the science of dentistry is not more sound. To remedy this evil the following directions are given for the preparation and demonstration of dental tissues. The development of teeth we are told is best demonstrated from the jaws of fœtal pigs, a series of these should be obtained, from one to six inches in length; for sections of fully developed teeth young kittens or rabbits are best adapted. The inferior maxillœ are to be disarticulated and each bottled in one per cent. chromic acid, the bone being suspended by a string. After complete decalcifiation they are embedded, either; firstly, between pieces of hog's liver previously hardened in alcohol and sections cut with a razor, or secondly, thin mucilage is used after the tissues have been twelve hours in water, they are finally placed in alcohol, and between pieces of liver as before. Before staining, all the gum must be removed by water; or thirdly, by Scheiferdecker's method, viz., celloidin (pyroxyline) is employed. A saturated solution in ether and alcohol is used after the decalcified specimen has been in ether and alcohol for twenty-four hours; it is best to place the tissues in the celloidin in a small paper box beneath a bell jar and leave them for twenty-four hours; finally, the mass being hardened is placed in equal parts of water and alcohol, strong alcohol should not be used, as it softens the mass.

The author prefers Thoma's microtome. For final mounting in Canada balsam the dehydrated stained specimens are passed through oil of cloves the celloidin removed and mounted as usual.

The embryonic tissues do not admit we are told of complicated methods of staining. The best results are obtained from sections of the head of the newt and common snake hœmatoxylon eosin. picro-carmine, and methyl greens are useful as single or double stains. Tissues hardened in chromic acid should be soaked in carbonate of soda 1 per cent for twenty minutes. Hæmatoxylon—10 drops in watch-glass of distilled water—is used for first staining; the sections remain in it until of a light straw colour, they are then washed in common water and placed in eosin. Dehydration can be performed cœtaneously with the eosin staining, by using a saturated solution of eosin in absolute alcohol. To effect this a few drops of this added to common alcohol is used. These tissues being stained and run through absolute alcohol are placed in a drop of oil of cloves upon a slide. When clarified remove excess of cloves, drop Canada balsam in chloroform on section and apply cove glass. For other double stainings Frey's formula of picro-carmine is recommended. Carmine 1 grm. liq. ammoniæ 4 c.cm. water 200 grm., mix and add picric acid 5 grms. This is evaporated and from the powder a half per cent solution is prepared. The tissues lie in this for 20 minutes or longer. They are then run through distilled water acidulated with a few drops of acetic acid; they are then placed in dilute hæmatoxylon for a few minutes; they are washed in water dehydrated in alcohol and then as usual through oil of cloves to Canada balsam. To double stain with methyl green the previously stained picro-carmine, sections are placed in 1 per cent solution of methyl green in alcohol and water (10 to 100). The sections are then put in absolute alcohol and clarified in oil and cloves. To double stain with methyl green and eosin, stain with eosin then wash with water acidulated by hydrochloric acid, then over-stain in methyl green, decolourizing in alcohol, and clarify in oil of cloves. Various sections of the developing teeth in the fœtus are then described are accuratoly illustrated.

CORRESPONDENZBLATT FUR ZAHNARZHE.

IODOFORM IN DENTAL PRACTICE, by A. CHRUSCHTSCHOW.

Since the discovery of the antiseptic properties of iodoform, and its introduction into surgical practice, its use has gradually been increased and has even been used internally. The effects of iodoform were eulogised to such a degree that even the attention of dentists was drawn to it, and they began to use it in their practice.

Skagsborg, of Stockholm, was the first to draw attention to it. He spoke of it at a gathering of Swedish dentists, made several experiments with it, and recommended his colleagues to use it instead of galvano-caustic, as that destroyed the pulp of the tooth, and only set it mechanically in the alveolus, so that its durability could not be depended upon.

One cannot altogether deny the truth of this assertion. Skagsborg has made two preparations: iodoform paste, iodoform cement. The iodoform paste is laid on the inflamed pulp of the tooth, and then covered with wadding soaked in mastich. The next day this is taken away, and the tooth plugged with iodoform cement. Skagsborg asserts that in seventy-two cases of inflamed tooth pulp, the tooth has been saved through his method.

He recommends the use of iodoform in acute periostitis, which generally arises through gangrene of the tooth pulp. Witzel (of Essen) uses the iodoform in another way, not as a paste but in æther solution (Iodoform, 1; sulphuric æther, 10) and not as a means of healing inflamed tooth pulp. He cauterizes first the pulp by means of Ac. Arsenic, then amputates the burnt part, lays on the iodoform solution, and covers the whole with iodoform phenol cement. Dr. Chruschtschow uses Skagsborg's iodoform paste, not because it is the best, but because it first came to hand, and because the preparation of the paste is easier than that of the liquid. In acute inflammation of the pulp is the iodoform of the salicylic or carbolic acid, not to be used because iodoform works as slowly as the last-named means.

With regard to the effect of iodoform in inflammation of the tooth root membrane (periostitis S. periodontitis) the following can be said. If the iodoform is used in cleansed root canals when all remains of the pulp have been removed then only can it be of use, and brilliant results may be obtained, but if the iodoform is laid on after the cavities had been cleansed with water only, there follows only temporary ease for the patient. If the iodoform completely heals the inflammation it must be put into the tooth and covered with gutta-percha as such teeth would otherwise be of a bluish colour and very shaky. In one case Dr. Chruschstchow, after repeated applications of iodoform could not prevent an abscess from forming. After the extraction of the tooth it was discovered that the cause of the abscess was a small piece of destroyed nerve to which the nerve extractor was hardly able to approach.

In any case iodoform is not a caustic, but in dentistry it will attain to a greater reception than chloride of zinc, carbolic or salicylic acid. It may be mentioned that in inflammation of the tooth pulp iodoform might be used for quiet sensible patients, who would know that a dentist is no sorcerer but a simple mortal. There are patients who complain of the dentist if the healing process is long and speak of friends of theirs who have been cured in the course of a day. It will often be found that the friend is in the habit of running to the doctor at every change of weather, at the least twinge of pain.

REMARKABLE EFFECTS OF A CHLOROFORM NARCOSIS, by PAUL RITTER, Dentist, Berlin.

With regard to the great dangers to which patients are often exposed by narcosis, the following case will not be out of place.

Dr. Ritter thinks with many other dentists that narcosis should not be had recourse to excepting in serious dental operations and very difficult cases, and then only at the direct wish of the patient. He prefers chloroform to protoxide of nitrogen as the influence of the latter is less known than the former.

On the 4th July, in the present year, Herr V——came to Herr Ritter to have a tooth extracted. As the crown was already destroyed through caries, the tooth, which was the second bicuspid of the superior maxilla, was to be removed under chloroform. Dr. Krow, who assisted in the narcosis, first examined and found that the heart and lungs of the man were perfectly sound. After the patient had inhaled five grammes, retching came on, although he had only had previously half-a-cup of black coffee. After Dr. Knohen's method they sought to stop this retching through rapid continuation of chloroform narcosis, but could not prevent vomiting. Then the narcosis was continued, and the operation accomplished. Directly after, a deep syncope came on, scarcely perceptible pulse and breathing. Luckily, this continued for so short a time that help was not called for, pulse and breath were again plainly perceptible, but the patient lay under the influence of a deep brain anamie. In consequence of this he was laid down and sal ammoniac held to his nostrils, This had hardly been done when a violent irritation of the larynx came on and almost prevented his breathing, so that his life was apparently in danger. He was immediately raised up and with great trouble restored to consciousness. He lay for an hour and a half on the sofa with severe pains of the eyes. This soon passed off, but he had to continue under medical treatment for eight days. This case shows that even in the use of so ordinary a means as liquor ammoniac caustic, the greatest care is necessary. Evidently the irritation of the mucous membrane had been too strong for a man previously exhausted through syncope, and without the greatest attention death from suffocation might easily have ensued. The effects of the narcosis showed that the nervous system of the patient was very weak, and it is probable that without knowing it he was suffering from a slight catarrh.

When he came to Dr. Ritter again to consult him about the filling of several carious teeth, he confessed that the weakness of his nerves was owing to his irregular life. Dr. Ritter says this case has made him even more careful than formerly in his preparations for laughing gas, and chloroform for narcosis. Besides the tongue forceps, the gag and the assistance of a doctor, he is always careful to have handy a solution of camphor 1, 0, æther 12, 0. for subcutaneous injection.

DEUTSCHE MONATTSCHRIFT DES VEREINS ZAHNKUNTSLER.

A New Vulcanising Hour Glass.

The firm, Gesell Brothers, Berlin, have invented a new vulcanising hour glass which is superior to any now in use. It is a sand-glass resembling those used at the baths, consisting of concave glass cylinder closed at both ends, half filled with fine sand. The cylinder is divided into two parts by a thickening of the glass in the middle, but both parts are connected by a slight aperture in the middle. The glass cylinder is made firm in a wooden frame open in front, on which the minutes can be counted by means of the graduation of a thermometer. If the thermometer of the vulcanising apparatus has reached the right degree of heat the part of the hour glass containing the sand is turned upwards and hung on the wall and so set the saw in motion. One is in this way able to ascertain at any moment the duration of the vulcanising time. It is superior to other hour glasses on account of its cheapness and durability. As the sand runs for an hour it will suit every consulting room.

Literary Notices and Selections.

DUNDEE NATURALISTS' SOCIETY.

THE TEETH OF REPTILES AND BIRDS.

An ordinary meeting of the Dundee Naturalists' Society was held in the Mathematical Class-room of University College last night—Mr. James Durham, F.G.S., in the chair. After the usual business, a paper was read by Mr. William Fisher, L.D.S., on "The Teeth of Reptiles and Birds." Mr. Fisher mentioned the variations in the physical structure of the different orders of reptiles, as seen in the structure of their hearts, their almost entire absence of lungs, their occasionally breathing through branchiæ, and in the variety of their external form, from the common worm to an alligator, and some extinct species even larger. Reptiles are termed "cold blooded" animals from their lack of muscular power, caused by the small quantity of oxygenated blood supplied to their muscles. Their general habits are sluggish, their sensations dull, their digestion slow, and in temperate climates they pass almost the whole winter in a state of torpor. Reptiles are divided in four orders—the first, Chelonia, including tortoises, turtles, &c.; the second, Batrachia, toads, frogs, &c.; the third, Ophidia, anguinis, serpents; and the fourth, Sauria, including crododiles, lizards, chameleons, &c. Almost all reptiles have an endless succession of teeth, though not so widely distributed as in fish. The chelonians having no teeth, the margins of their jaws are sheathed in horny cases, which are variously shaped in accordance with the habits of the animal, being sharp and trenchant in carniverous, and blunt and rugged in herbivorous species. The type of teeth common to batrachians is a double row arranged in concentric lines on the upper jaw, between which a single row in the lower jaw passes when mouth is closed. There are many deviations from this rule, however, the toads, for example, having no teeth, and the frogs only a single row on the margin of the upper jaw. Others, such as the newt, the salamander, the tadpole, and the great extinct labyrinthodon, having each a distinct system of its own. In both groups of serpents, poisonous and non-poisonous, the teeth are strongly recurved, and are simply available for seizing and retaining prey, which is by them invariably swallowed whole. There is on African snake, the Rachiodon, without teeth, which feeds entirely on eggs, which reach the œsophagus before being broken by the vertebral processes that project into the œsophagus. In the Saurians the teeth are confined to the borders of the jaw, some sharp and others rounded, with a continuous succession of new teeth taking the place of the old, so that the members of this order have the same number of teeth at death as at birth. Regarding birds, Mr. Fisher said that until quite recently it was supposed that there were no examples of teeth in birds to be found, but Profesor Marsh, by his numerous discoveries of fossil birds in the cretaceous deposits in the Rocky Mountains, has amply proved the existence of teeth, he having now 150 species of different birds having teeth. The American fossils are included in nine genera and twenty species. The lecture, which proved a most instructive and interesting one, was well illustrated by diagrams, and at the close Mr. Fisher was awarded a hearty vote of thanks for his able paper.

Dental News.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Ordinary Monthly Meeting, held Nov. 3rd, 1884.

J. Smith Turner, M.R.C.S., L.D.S., Eng., President, in the Chair.

The minutes of the previous meeting having been read and confirmed,

The President announced that the following gentlemen had been duly nominated as candidates for election, and would be balloted for at a subsequent meeting, viz.: Messrs. John Alexander Fothergill, M,R.C.S.,L.S.D., Eng., D.D.S. Univ. Pennsylvania, Northgate, Darlington ; John Brooks Bridgman, L.D.S.I., St. Giles' Street, Norwich.

The following candidates were then balloted for and elected non-resident Members of the Society :—Messrs. Arthur Baines, L.D.S.I., Lichfield House, Hanley ; Stephen Mundell, L.D.S., Eng., 8, Mulgrave Place, Plymouth ; and Arthur Pellant, L.D.S.I., Maidenhead.

The President then called upon the Curator of the Museum to announce any donations which he had received since the last meeting.

Mr. Hutchinson said he had only two donations to bring before the Society. He had received from Mr. Coleman, just before his departure, a specimen of the swivel and spring used bv Mr. Rogers of Hanover Square, and he could himself strongly commend them to the notice of members. He knew of a patient who had worn them for fifteen years without any repairs having been required.

The other specimen was a model, sent by Mr. Lyddon of Reading, showing transposition of the left lower canine. The patient was a young man, aged twenty-three, and the tooth was situated to the right of the median line in front of the right central.

Mr. Weiss reported that several additions had been made to the Library during the recess. Sir Edwin Saunders had offered a collection of fourteen volumes, but as ten of these were already in the Library, only four were accepted. These were—"The Natural History of Human Teeth," by Joseph Murphy ; 1811. "On the Teeth of the Horse," by T. Irwin Ganly ; 1829. "On the Age of the Ox, Sheep, and Pig," by J. B. Simonds ; 1854. Three Short "Treatises on the Teeth," by A. F. Talma, J. M. A. Schange, and C. F. Delabarre, in French, bound in one volume ; published in 1842-3.

The following donations had also been received:– "Removal of Tumours," by C. F. Maunder; 1874. "On Taking Impressions of the Mouth," by J. W. White, Philadelphia; 1871. "The Student's Guide to Dental Anatomy and Surgery," by Henry Sewill; "Dental Caries," by Henry Sewill; "The Journal of Anatomy and Physiology;" "The Transactions of the Royal Society;" "The Transactions of the Royal Dublin Society;" "The Quarterly Journal of Microscopical Science;" "The Annual Report of the Smithsonian Institution."

Mr. Morton Smale showed models of a case in which there was congenital absence of both temporary and permanent lower incisors. The patient was a boy, and the models were taken at the age of nine years and twelve years respectively. In the upper jaw the permanent laterals were absent. The rest of the family presented nothing peculiar as regards their dentition.

He also showed models of the mouth of a female patient, aged twenty-five, in whom all the permanent incisors, both upper and lower, were absent. In this case the father had the same deficiency, but out of several children only this one daughter resembled him in this respect.

Mr. Arthur Underwood said he had then under his care a case which puzzled him, and with regard to which he should be glad to obtain the advice of those present. His patient was a middle-aged gentleman, who had a very fair set of teeth, all healthy, but a good deal worn. The only teeth which troubled him were an upper and lower molar; these were much worn, the enamel covering the cusps being gone, and dentine exposed. The teeth were, however, completely insensitive except at one spot in each tooth; but here there was most acute sensibility. The sensitive spot occupied precisely the same situation in each tooth, being confined to a very minute point of what had been the anterior external cusp. Exposure either to heat or cold gave intense pain. There could be no doubt but that a small filament of the pulp was exposed, though he could not detect any evident signs of this, even by careful examination through a magnifying glass.

The question was as to the best way of dealing with such a case. He had first tried the application of strong carbolic acid, but this did no good. He then applied chloride of zinc. This caused intense pain for a few moments, but after two or three applicaaions the sensitiveness was greatly diminished and eventually he dismissed the patient in a decidedly hopeful frame of mind. But at the end of the week he returned, saying that he had been pretty comfortable for a few days after the application, but that then the sensitiveness returned as acutely as before. Mr. Underwood again used the zinc chloride, with the effect of giving temporary relief, but he should be glad to hear of some more effectual and lasting method of treatment.

He would add, with reference to the explanation he had suggested, that it was not very uncommon to meet with cases in which prolongations from the pulp were found in unexpected proximity to the surface of a tooth. Thus in a case he had seen at the Dental Hospital, a filament of the pulp of a bicuspid tooth extended quite to the surface of the dentine, and exposure of the pulp resulted from the mere accidental chipping off of a small fragment of enamel.

Mr. Walter Coffin remarked that in looking at a section of a tooth made through the horns of the pulp under the microscope it was very difficult to tell exactly where the pulp tissue ended, and it had often appeared to him that it approached a good deal nearer to the surface than was generally supposed.

Mr. D. Hepburn said he had noticed that the most common situation for an exposure of the pulp in molars was just the part which Mr. Underwood found so sensitive in this case, viz., the anterior external cusp. Of the sensitiveness of the pulp even when not exposed, he had had a remarkable ocular demonstration in the case of a patient with unusually transparency of the teeth caused by attrition, resulting from an edge to edge bite. The outline of the pulp cavities of the incisors could be distinctly seen, and in the case of one of the canines, though it might sound almost incredible, he could actually see the nerve retract when an instrument was passed over the surface of the tooth.

Mr. W. A. Hunt said be had met with a case somwhat similar to that described by Mr. Underwood, but unfortunately he had only seen it at a much more advanced stage. A healthy young man came to him complaining of tenderness about a lower left central. The tooth was evidently dead, and there was a fistula over the root, but it was not carious; the rest of his teeth were good, and he had not met with any accident. It was extracted and on examination a minute canal was found leading from the surface of the tooth to the pulp cavity. No doubt this had been closed externally by a thin layer of enamel, which had been worn away or been broken through, and exposure and death of the pulp had been the result.

Dr. Field suggested that, as apparently only a small filament from the pulp was involved, the best treatment would be to destroy this by the application of some strong escharotic, cut away a small portion of the dentine, and cap with cohesive gold.

Mr. Stocken said that under the circumstances described by Mr. Underwood he should be disposed to drill a small cavity in the dentine, and then fill it with osteo. He had met with a case having some points of resemblance to that quoted by Mr. Hunt. A patient consulted him with reference to stopping a lower molar. There appeared to be nothing abnormal in the condition of the tooth, which seemed well suited for a gold filling. He filled it accordingly, without the slightest discomfort to the patient. About a year afterwards the patient returned, and reported that she had occasional twinges of pain when she took hot or cold things into her mouth. Mr. Stocken carefully examined the tooth, but could not find any cause for the pain ; however, as the sensitiveness continued, he substituted an osteo filling for the gold. As this was not followed by any improvement, he removed the osteo, dressed the cavity with escharotics and plugged it with gutta-percha. This gave only transient relief, so he cautiously opened the pulp cavity, and to his astonishment found the pulp dead, almost dry, and free from any unpleasant odour. He treated the cavity with antiseptics, and re-stopped with osteo ; since then the patient had not had the slightest inconvenience.

Mr. Browne-Mason said he should not have hesitated to use the actual cautery in such a case as Mr. Underwood's ; this would have destroyed the fibril, and he should not have anticipated any harm being done to the pulp.

The President said he had a patient, a very powerful man, who had an inveterate habit of grinding his teeth, which were a good deal worn in consequence, and presented occasional sensitive points. The most troublesome teeth in this respect were two lower molars. He (Mr. Turner) was in the habit of removing this sensibility by applying fuming nitric acid by means of a pointed piece of wood. He then polished the teeth with a fine corundum point, and the patient would be free from pain for a year, when the same operation had to be repeated.

Mr. Moon remarked that it was of course a well-known fact that the horns of the pulp approached the surface more closely under the cusps of the molars than elsewhere. With regard to the treatment of the case, he could only add one suggestion to those already made, and that was, that if there was any probability of artificial teeth being required, Mr. Underwood should take advantage of the opportunity to raise the bite a little.

Mr. Underwood, in reply, said he was very much obliged for the suggestions which had been offered. He felt very unwilling to cut into a sound sooth, and thought that the insertion of a metal stopping in such a case would not improbably be followed by irritation of the pulp. He hoped that the adoption of the plan suggested by the President might render recourse to any such measures unnecessary.

Mr. Ackery showed models of two cases of transposition of a permanent canine; in one case it occupied the position of the central incisor of the same side, in the other that of the first biscupid. The temporary canine persisted in both cases.

Mr. Willoughby Weiss showed a left upper lateral, with a very well-developed supplementary cusp.

He also related the history of a remarkable case of salivary calculus surrounding three lower incisors, and showed a model of the patient's mouth.

The patient, a woman, first came to him in April, 1881; her mouth was in a very dirty and neglected state; there was a good deal of tartar about the teeth, but especially about the root of the lower left central, which was entirely surrounded by the deposit. The tooth was loose, and could be removed and replaced by the finger. She refused to have anything done, and was not seen again till June, 1882, when the right central was found to be affected in the same way. She again refused to submit to any treatment, and disappeared until July, 1883, when the left lateral was found to be similarly affected. During this time she had suffered no pain, and was able to masticate fairly, although all three teeth could be removed and replanted at will. About January, 1884, the gums began to get tender, and about the beginning of May she had to take out the loose teeth while eating, replacing them afterwards. At last, in July, 1884, she allowed Mr. Weiss to remove the three teeth, together with the right lateral which was getting loose, and an artificial denture was fitted. The peculiarity of the case was not the amount of the tartar, but the way in which it was deposited round each tooth, so that each one, as it were, locked its neighbour in its place.

Mr. Redman, of Brighton, exhibited a face-piece which he had used in the administration of anæsthetics for three years past, and found to fit better than any other which he had tried. It would be found specially useful for patients with thin, hollow cheeks, and for men with thick beards, &c.

The President remarked that he had seen a very good face piece extemporised out of a child's india-rubber ball.

Mr. W. A. Hunt (Yeovil) showed a lower molar which had been obliquely fractured during the operation of extracting an upper molar with the key. The fracture had, however, been closed by the deposit of secondary dentine, within the pulp cavity, and when the tooth was extracted, thirty-three years after the accident, the pulp was found to be healthy.

Mr. Dennant said he had a suggestion to make. Those who had been present at the reading of Mr. Campbell's paper at the meeting of the British Dental Association at Edinburgh would remember the very clear and satisfactory manner in which models of the cases he described were exhibited by means of the oxy-hydrogen light. He wished to suggest that it would be a good plan if the Society were to have some similar demonstrations occasionally. Instead of, as at present, getting the model five or ten minutes after the case had been described, members would then be able to follow the description with the model displayed before them. All that was necessary was to have the models photographed beforehand, and this could be done at very trifling expense.

The President said he was informed that Dr. Walker had provided himself with a lantern for use at his lectures on Dental Mechanics, and that he had very kindly placed it at the disposal of the Society for use at the meetings if desired. This lantern was an improvement on that used by Mr. Campbell, in that the representation on the screen could be made from the model itself, without any necessity for its being photographed. He saw no objection to the plan being tried if the members wished it.

He then called upon Mr. F. N. Pedley to read his paper on "Some Points connected with the Treatment of Fracture of the Inferior Maxilla." (See page 1137.)

OBITUARY.

Dorey.—On the 1st inst., at 11, Buckingham Road, Brighton, Richard St. John Dorey, L.D.S., Eng. Aged 29. Friends please accept this intimation.

APPOINTMENT.

Mr. Fred. W. Richards, L.D.S., Eng., has been appointed Assistant Dental Surgeon to the Birmingham Dental Hospital.

BOOKS AND PAPERS RECEIVED.

Lancet; British Medical Journal; L'Odontologie; Pharmaceutical Journal; Dental Cosmos; Zahntechnische Reform; Independent Practitioner; Progrès Dentaire; L'Art Dentaire; Chemist and Druggist; Dental News; New England Journal of Dentistry; Monatsschrift des Vereins Deutscher Zahnkunstler; Dental Luminary; Gazette des Hospitaux; Southern Dental Journal; El Progreso Dental de la Habana L'Odontologia; Pharmaceutical Journal; Dental Headlight; Items of Interest; Centrallblatt fur Zahnheilkunde; Ohio State Journal; American Journal of Dental Science.

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